S. Hrg. 100-236

REAUTHORIZATION AND EXTENSION OF THE PRICE-ANDERSON ACT

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON THE

REAUTHORIZATION AND EXTENSION OF THE PRICE-ANDERSON ACT

MARCH 18, 1987

WITHDRAWN

87.631P

Printed for the use of the
Committee on Energy and Natural Resources

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REAUTHORIZATION AND EXTENSION OF THE PRICE-ANDERSON ACT

WEDNESDAY, MARCH 18, 1987

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The committee met, pursuant to notice, at 9:30 a.m., in room SD-366, Dirksen Senate Office Building, Hon. J. Bennett Johnston, chairman, presiding.

OPENING STATEMENT OF HON. J. BENNETT JOHNSTON, A U.S. SENATOR FROM THE STATE OF LOUISIANA

The CHAIRMAN. The hearing will come to order.

It is my pleasure to welcome witnesses from the Department of Energy and public witnesses to today's hearing.

The purpose of this hearing is to receive testimony on reauthorization and extension of the Price-Anderson Act. I believe the Price-Anderson Act should be extended. There is a limited amount of time to reauthorize the Act before it expires on August the 1st. I hope that we will be able to mark up legislation quickly so that we meet that date.

The Price-Anderson Act, first enacted in 1957, sets up a comprehensive, compensation-oriented system of liability insurance for DOE contractors and for Nuclear Regulatory Commission licensees. The Price-Anderson system assures the public of compensation in the case of a nuclear accident while maintaining a predictable limit on liability.

There is an immediate need for action on legislation to extend the Act. If the Act expires, it is generally believed that the nation's existing nuclear power reactors will be covered under the Price-Anderson system for the term of their operating licenses. However, contractors to the Department of Energy—those involved in atomic energy defense, uranium fuel preparation, and nuclear waste disposal—would be without the comprehensive liability insurance system provided by Price-Anderson. Congress must act quickly to preserve the ability of the Federal Government to undertake these essential activities.

Last year, our Committee reported legislation that would have extended the Act for 25 years and established a limit on liability of $2.3 billion. The current limit on liability is $500 million for DOE contractors and about $700 million for NRC licensees. The Environment and Public Works Committee also reported legislation which

would have extended the Act for 20 years and raised the limit substantially higher.

Our two Committees worked out a compromise that would have extended the Act for 20 years with a limit on liability of $6.6 billion. This compromise, however, never reached the Senate floor. I hope we can reach a similar compromise this year that can be brought to the floor in time to meet the August 1st deadline.

The bill I introduced yesterday, the Price-Anderson Amendments Act of 1987, will amend the Atomic Energy Act of 1954, as amended, to extend the Price-Anderson system for compensation of the public in the event of an accident resulting from activities undertaken by DOE contractors.

This bill addresses only the DOE contractor portion of the Price-Anderson Act, leaving intact the provisions relating to NRC licensees. The bill will increase the overall limit on liability from the current level of $500 to $6 billion.

I might say that I am in good hopes that we can put together essentially the same compromise this year with the Environment and Public Works Committee that we had last year. I have been talking to Senator Burdick about that. Senator Breaux has already agreed to it, and I am in good hopes that Senator Burdick will as well.

In the meantime, this legislation, which relates only to DOE contractors, which is exclusively in the jurisdiction of this Committee, will proceed forward, so that if we do not get the joint agreement, then we will have this legislation within our Committee.

Our first witness today is the Honorable James W. Vaughan, Jr., Principal Deputy Assistant Secretary for Nuclear Energy Programs.

Mr. Vaughan, we are delighted to have you. You are accompanied, of course, by Mr. Jerome Saltzman, Deputy Director for the Office of Policy and Outreach, of the Office of Civilian Radioactive Waste Management, and by Ms. Susan Kuznick, from the Office of the General Counsel.

Welcome to all of you, and please proceed, Mr. Vaughan.

Yes, Senator Metzenbaum.

Senator METZENBAUM. Mr. Chairman, I am not going to be able to remain for the entire hearing, but I have had a strong interest in this subject over the years, and if you do not mind, I would like to make a short opening statement.

The CHAIRMAN. Yes, please do.

STATEMENT OF HON. HOWARD M. METZENBAUM, A U.S. SENATOR FROM THE STATE OF OHIO

Senator METZENBAUM. These hearings provide us with an opportunity to review some of the unresolved issues associated with reauthorization of the Price-Anderson Act.

My interest in this is straightforward: Maximum protection and full compensation for citizens in communities. Last year's bill did not provide such assurances, and I am hopeful we can correct that.

One issue of great concern to me is the lack of accountability of contractors at DOE nuclear facilities. Current law does not encourage contractors to do all that they can to protect public health and

safety. They are held harmless for all damages, even those which result from their own gross negligence or willful misconduct. That, to me, is bad public policy.

DOE would have us believe that aggressive oversight in regulation on its part will ensure responsible performance. But frankly, that is not the way things have worked out so far.

To put it bluntly, the condition of DOE nuclear facilities around this nation is scandalous. It is just scandalous. I will not recite the laundry list of problems which exist. It may have come about by reason of the facts that in yesteryear the responsibility for developing the nuclear facilities was concentrated in the same agency that had the responsibility to protect the public; and as a consequence, there was more interest in developing the facilities than there was in protecting the public.

In my own State of Ohio, the situation has gotten so bad that today our Attorney General is filing suit to force the Department of Energy and its contractors to comply with environmental laws at two facilities.

In recent testimony before the Governmental Affairs Committee, Ms. Kehoe stated: There are serious questions about both the safety of individual facilities and DOE operations as a whole. Clearly, DOE is either unable or unwilling to keep its own contractors in line. And now communities are faced with the prospect of DOE-managed nuclear waste repositories and high-level nuclear waste shipments.

Given DOE's poor track record, we cannot afford to enact legislation which holds contractors harmless for reckless behavior. Such a special protected status is unwarranted and inconsistent with federal policies in other areas. Other federal laws limiting industry liability for critical activities do not protect gross negligence or willful misconduct. Yet we are told the Department of Energy must provide full indemnification to attract and retain its contractors.

I do not accept that. I do not believe it. What we are not told is that the same contractors willingly perform hazardous nuclear work for the Defense Department without coverage for bad faith or willful misconduct. That is absolutely unbelievable. It is absurd. And to think that we are talking about putting that into permanent law, to me, is just scandalous.

In fact, prior to the enactment of the Price-Anderson Act in 1957, many of these same contractors worked at AEC facilities under indemnity agreements which excluded gross negligence and bad faith. Why should they be less accountable today than they were prior to 1957?

Last year I proposed to hold contractors liable for the costs of accidents caused by their gross negligence or willful misconduct. That would ensure that contractors, not the taxpayers, would bear the responsibility for patently unsafe practices and activities.

Mr. Chairman, I intend to pursue this and several other issues when we begin to mark up the Price-Anderson legislation. I believe that it would serve the purposes of all concerned if we can work out a piece of legislation that can take into account concerns that I have expressed here today.

I think that we need to find a way to move this legislation that protects those who are within range of the nuclear facilities.

The CHAIRMAN. Further opening comments?
Senator Bingaman.

STATEMENT OF HON. JEFF BINGAMAN, A U.S. SENATOR FROM THE STATE OF NEW MEXICO

Senator BINGAMAN. Mr. Chairman, I have a short statement I would like to put in the record, if I could. I do think this is very important legislation and I commend you for starting so early in this session to deal with it.

[The prepared statement of Senator Bingaman follows:]

STATEMENT BY SENATOR JEFF BINGAMAN
HEARING ON THE PRICE-ANDERSON ACT
March 18, 1987

I thank the Chairman for scheduling this hearing on the Price-Anderson Act. It is important that we begin early in this session to consider the Act since it expires August 1st of this year.

The Price-Anderson Act is extremely important legislation which establishes a system for compensating victims of accidents involving the release of radiation off-site from nuclear power plants, facilities operated by contractors for the Department of Energy, and research reactors operated by universities and private businesses.

In the 99th Congress, each of the five Jurisdictional Committees of the House and Senate reported bills extending the Act but none of these bills were considered by the full House or Senate. Passage of legislation extending the Act has been significantly complicated by the controversy over siting nuclear waste disposal facilities and the nature of

the coverage of these facilities and related activities under the Price-Anderson Act.

Key issues we must consider include the level to which the liability limit should be raised, whether this limit would be indexed for inflation, DOE contractor indemnification, whether to award punitive damages, and the length of extension of the Act.

I look forward to the testimony of our witnesses today and to working with the Chairman to successfully enact legislation extending the Act this session.

The CHAIRMAN. Thank you, Senator Bingaman.
Senator McClure or Senator Hecht.
Senator McClure.

STATEMENT OF HON. JAMES A. McCLURE, A U.S. SENATOR FROM THE STATE OF IDAHO

Senator MCCLURE. Just very briefly, Mr. Chairman, I think we need to underscore the fact that while indeed commercial reactors may not need Price-Anderson renewal, until we get another round of commercial activity, it is absolutely essential that we have an extension with respect to government contractors.

I am not going to close the door to trying to deal with commercial reactors or whatever may be necessary or desirable as we develop the legislation, but it is imperative to meet the deadline that deals with the exposure of contractors with the federal government.

For that reason, I commend the Chairman of this Committee for the very expeditious scheduling of this hearing, and will support in any way I can the activities towards a conclusion.

I would ask that my statement be placed in the record.

[The prepared statement of Senator McClure follows:]

OPENING STATEMENT

SENATOR JAMES A. McCLURE

MARCH 18, 1987, HEARING ON PRICE-ANDERSON

I THANK THE CHAIRMAN FOR SCHEDULING THIS HEARING SO THAT WE CAN MOVE FORWARD EXPEDITIOUSLY IN THE TASK OF RENEWING AND AMENDING THE PRICE-ANDERSON ACT. AS YOU RECALL, WE SPENT CONSIDERABLE TIME DURING THE LAST CONGRESS ON THIS MATTER, BUT UNFORTUNATELY, WE WERE UNABLE TO REACH AN ACCEPTABLE COMPROMISE WITH THE HOUSE.

THIS YEAR, WE DO NOT HAVE THE LUXURY OF TIME ON OUR SIDE WITH RESPECT TO THIS ISSUE. THE AUGUST 1, 1987, DEADLINE IN THE CURRENT STATUTE--THE DATE OF EXPIRATION OF THE GOVERNMENT'S AUTHORITY TO INDEMNIFY NEW NRC LICENSEES OR NEW DOE CONTRACTORS UNDER THE PROVISIONS OF PRICE-ANDERSON--IS LESS THAN FIVE MONTHS AWAY, AND WE HAVE ONLY JUST BEGUN THE LEGISLATIVE PROCESS TO EXTEND THE ACT.

I HAVE STATED ON MORE THAN ONE OCCASSION, IN PAST DISCUSSIONS ON PRICE-ANDERSON, THAT COMMERCIAL NUCLEAR POWER PLANTS ARE COVERED, AND WILL CONTINUE TO BE COVERED, UNDER THE CURRENT PRICE-ANDERSON LAW, AND THEREFORE, EXTENSION OF PRICE-ANDERSON WITH RESPECT TO THESE PLANTS IS NOT ESSENTIAL. IN FACT, PRICE-ANDERSON EXTENSION ONLY BECOMES AN ISSUE WHEN NEW REACTOR PLANTS ARE ORDERED, A CONDITION THAT EVEN THE NRC AND THE UTILITIES ADMIT IS NOT LIKELY TO OCCUR ANY TIME SOON. YET, IF THERE ARE COMPELLING REASONS TO RENEW AND AUGMENT THE PRICE-ANDERSON SYSTEM WITH RESPECT TO OUR COMMERCIAL NUCLEAR PLANTS, THEN I AM AMENABLE TO CHANGES HERE.

THE DEPARTMENT OF ENERGY NUCLEAR ACTIVITIES ARE AN ENTIRELY DIFFERENT MATTER, HOWEVER. THE DEPARTMENT OF ENERGY PERFORMS A NUMBER OF FUNCTIONS WITH RESPECT TO CIVILIAN NUCLEAR RESEARCH, NUCLEAR WEAPONS DEVELOPMENT, AND NUCLEAR MATERIALS PRODUCTION. THESE ACTIVITIES ARE CARRIED OUT BY CONTRACT WITH SOME 100 PRIME CONTRACTORS AND THOUSANDS OF SUBCONTRACTORS. TYPICALLY, THESE CONTRACTS ARE OF LIMITED DURATION AND MUST BE RENEWED ON A PERIODIC BASIS--MOST OFTEN EVERY FIVE YEARS. THERE ARE TWO MAJOR CONTRACTS THAT COME TO MIND THAT WILL EXPIRE, AND THERFORE WILL HAVE TO BE RENEWED SHORTLY AFTER THE AUGUST 1 DEADLINE: ONE AT THE HANFORD, WASHINGTON LABORATORY SITE, AND ONE WITH THE UNIVERSITY OF CALIFORNIA, WHICH OPERATES LAWRENCE LIVERMORE, LAWRENCE BERKELEY, AND LOS ALAMOS LABORATORIES.

IF WE FAIL TO RENEW PRICE-ANDERSON, THE DEPARTMENT OF ENERGY WILL NOT HAVE THE AUTHORITY TO INDEMNIFY THESE CONTRACTORS FOR LIABILITY ARISING FROM A NUCLEAR ACCIDENT AT THESE DOE FACILITIES. AND WITHOUT SUCH LIABILITY COVERAGE, POTENTIAL CONTRACTORS WILL NOT BE ABLE TO PERFORM WORK FOR DOE. THEY WOULD NOT BE ABLE TO ASSUME THE POTENTIALLY HUGE RISKS ASSOCIATED WITH LIABILITY CLAIMS--ESPECIALLY IN THIS DAY AND AGE, WHEN THE TORT LAW SYSTEM AND THE LIABILITY CLAIMS EXPERIENCES IN A NUMBER OF HIGH-RISK INDUSTRIES ARE TOTALLY OUT OF CONTROL. ANY OTHER LIABILITY COVERAGE THAT THE DEPARTMENT OF ENERGY COULD OFFER WOULD CERTAINLY BE LESS THAN ADEQUATE, BOTH FROM A CONTRACTOR COVERAGE STANDPOINT AND FROM A VICTIM'S COMPENSATION STANDPOINT. IN ONE OF THE WORST-CASE SCENARIOS I CAN IMAGINE, WHERE NO ONE IS

INTERESTED IN CONTRACTING WORK WITH DOE, NEW FEDERAL EMPLOYEES WOULD HAVE TO BE HIRED TO PERFORM THE NECESSARY WORK AT THE LABS. IN SUCH AN INSTANCE, POTENTIAL PLAINTIFFS COULD ONLY FILE CLAIMS UNDER THE FEDERAL TORT CLAIMS ACT. THIS WOULD MAKE IT EXTREMELY DIFFICULT AND TIME-CONSUMING FOR VICTIMS TO OBTAIN ANY KIND OF COMPENSATION, ESPECIALLY AS COMPARED TO THE PRICE-ANDERSON SYSTEM. CARRYING THIS SCENARIO EVEN FURTHER, IT IS POSSIBLE THAT THE WORK NOW UNDERTAKEN BY DOE--IN VITAL AREAS OF NUCLEAR RESEARCH AND WEAPONS DEVELOPMENT--WOULD COME TO AN ABRUPT HALT. I FIND THIS TO BE A TOTALLY UNACCEPTABLE POSSIBILITY FROM A NATIONAL SECURITY STANDPOINT ALONE.

LET ME ALSO REMIND MY COLLEAGUES THAT THE DEPARTMENT IS RESPONSIBLE FOR THE DISPOSAL OF OUR NATION'S TRANSURANIC WASTE, SPENT FUEL, AND HIGH LEVEL WASTES GENERATED FROM BOTH THE COMMERCIAL AND THE DEFENSE SECTORS. NO ONE APPRECIATES THE SIGNIFICANCE OF THE PRICE-ANDERSON SYSTEM MORE THAN I DO, AS I COUNT THE NUMBER OF STATES WITH AN ACTIVE INTEREST IN THE DEPARTMENT'S PROGRESS WITH RESPECT TO IMPLEMENTATION OF THE NUCLEAR WASTE POLICY ACT OF 1982.

WE ARE CERTAINLY NOT LACKING FOR REASONS TO MOVE FORWARD WITH RENEWAL OF THE PRICE-ANDERSON ACT. HOWEVER, I SUGGEST THAT, WHILE WE'RE WORKING ON THIS TASK, WE MAKE EVERY EFFORT TO ENSURE THAT THE END RESULT IS THE BEST COMPREHENSIVE, RESPONSIBLE, AND RESPONSIVE SYSTEM THAT WE CAN POSSIBLY DELIVER TO OUR NUCLEAR COMMUNITY AND TO OUR PUBLIC AT LARGE.

THANK YOU, MR. CHAIRMAN.

The CHAIRMAN. Without objection.
Senator Domenici.

STATEMENT OF HON. PETE V. DOMENICI, A U.S. SENATOR FROM THE STATE OF NEW MEXICO

Senator DOMENICI. Mr. Chairman, I concur with Senator McClure wholeheartedly. It may very well be, as he said, that we do not need as broad an extension as is contemplated in terms of time frame, but clearly, we must do something about the DOE contractors. That must be done quickly.

I, too, commend you. If you are wondering, I have not co-sponsored your legislation yet. We have not had a chance to review it. We will. I wanted to talk with my colleague, Senator Bingaman, and he and I are going to confer with reference to it, and I assume in very short order we will advise you with reference to our—at least I will, and I assume Senator Bingaman will—with regard to our co-sponsorship of your measure.

But in all events, I am ready to cooperate and expedite, and commend you for it.

The CHAIRMAN. Well, I thank you, Senator Domenici. As I said, I think before you came in, we are in good hopes that the legislation that was signed on jointly last year by Senator McClure and me, and Senators Simpson and Stafford last year, this year will be agreed to. Senator Breaux has agreed, but Senator Burdick has not yet I think had a chance to review it, nor has Senator Stafford. I am in good hopes that they will sign onto that.

There is almost identical legislation introduced on the House side by Udall, Sharp, the main players over there, and if they will do that, then we can come together on one bill. I think it is $6.6 billion as the figure.

In any event, if they do not, we will be ready to go forward with our contractor legislation.

Senator Hecht.

STATEMENT OF HON. CHIC HECHT, A U.S. SENATOR FROM THE STATE OF NEVADA

Senator HECHT. Thank you, Mr. Chairman. I, too, appreciate your holding these hearings, and I have a statement but I will just read one paragraph out of it and put the rest in the record.

It is very important that we create a system with adequate coverage for the contractors at our Department of Energy facilities, and that we raise the liability limits of the current Act to an amount that is adequate for today and the future. As you well know, my State has quite a bit going on as far as nuclear related activities. So I will not take any more time to present this for the record.

The CHAIRMAN. Thank you, Senator Hecht.

[The prepared statements of Senator Hecht and Senator Evans follow:]

STATEMENT by SENATOR CHIC HECHT

Committee on Energy and Natural Resources

Hearing on the Price-Anderson Act

March 18, 1987

Mr. Chairman, we resuming the effort to extend and reauthorize the nuclear liability system established by the Price-Anderson Act. Last year, we came to a compromise on a bill that both this Committee and the Senate Environment Committee found acceptable.

It is very important that we create a system with adequate coverage for the contractors at our Department of Energy facilities, and that we raise the liability limits of the current act to an amount that is adequate for today and the future.

One thing for us to keep in mind as we listen to these witnesses and move on to the development and consideration of legislation is that we have facilities which generate high level nuclear waste. We have waste being transported around the country. We are

considering possible sites for the waste--one of them, I might add, is proposed for my own State of Nevada. Price-Anderson legislation must explicitly recognize this and cover the facilities associated with high level nuclear waste transportation, storage, and disposal.

Mr. Chairman, I look forward to some hard work by this Committee to promptly take action on the Price-Anderson extension.

Statement of Senator Daniel J. Evans
on the
Reauthorization of the Price-Anderson Act

March 18, 1987

Mr. Chairman, I appreciate your efforts in scheduling this timely hearing on the reauthorization of the Price-Anderson Act. This legislation is absolutely essential in ensuring that individuals injured as the result of an accident involving nuclear materials are compensated in a prompt and equitable manner.

I have a deep interest in the Price-Anderson Act coming from a state which is the site of one operating commercial reactor, the home of several Department of Energy facilities, and which is one of three candidate sites for the nation's first deep geologic repository for high-level radioactive waste. During the consideration of this issue last year during the 99th Congress, I focused on three key issues, on which I again plan to concentrate as we consider the reauthorization of this important statute.

First, with the passage of the Nuclear Waste Policy Act of 1982 (NWPA), the Department of Energy was charged with accepting title to the spent fuel generated by our nation's commercial nuclear reactors, ultimately disposing of it in a deep geologic repository. The NWPA injects a new element into the Price-Anderson debate, and I believe strongly that we must take steps to explicitly include waste under the provisions of Price-Anderson. If we are going to restore public confidence in the federal government's ability to safely dispose of nuclear waste, it is absolutely imperative that we ensure that citizens are protected in the event of an accident involving this material.

Secondly, I believe we must ensure that all citizens are adequately protected if they suffer from unique injuries which may occur from exposure to radioactive materials. While I understand that it has previously been up to the states to establish a statute of limitations provision beyond that which is contained in the current Price-Anderson Act, the transportation of nuclear waste is a federal responsibility, and the federal government should therefore take the lead in providing protections which are in line with the type of injuries which might be expected.

Finally, we must fully explore the issue of contractor liability. I am well aware that the indemnification of contractors is a key element of the Price-Anderson Act, yet legitimate concerns have been raised that this blanket indemnification may

not promote adequate responsibility on the part of DOE contractors. The record of management at the DOE site at Hanford in my state has been extremely poor. Safety audits have shown that serious safety violations have occured at the Hanford site, leading DOE to temporarily close certain facilities. While I understand that a new contractor is assuming responsibilities at Hanford in October, I am not at all convinced that this is going to solve the problems which have plagued DOE operations at Hanford. I therefore look forward to a full discussion of the contractor liability issue as we move forward with renewing Price-Anderson.

I again thank the Chairman for bringing this matter before the Committee, and look forward to having the benefit of the testimony of the the witnesses this morning.

The CHAIRMAN. Mr. Vaughan, please proceed.

STATEMENT OF JAMES W. VAUGHAN, JR., PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR NUCLEAR ENERGY, DEPARTMENT OF ENERGY

Mr. VAUGHAN. Mr. Chairman, it is indeed a pleasure for us to be here today to discuss extending and amending the Price-Anderson Act.

Like several have commented from the bench, we also appreciate the Committee's leadership in addressing the matter early in this session of Congress.

The Price-Anderson Act is a very forward looking mechanism, created many years ago to assure the American public that their claims for injury will be promptly addressed and paid in the unlikely event of a major nuclear incident.

I think it is important in all of these discussions that we not lose track of what the Price-Anderson Act was created for; that is, a major nuclear incident, and not the day-to-day treatment of environmental problems which can be handled in other ways.

Therefore, the Department strongly supports a reasonable extension of this Act, because without continuation of the unique umbrella protection that is provided by the Act, contractors at all levels may well refuse to continue doing business with the Department, including those organizations with which the Department contracts to manage our major government-owned installations, our national laboratories, and this is a unique feature to the Department of Energy, as you all well know.

I think it is important that we remember that Price-Anderson has two key features. It balances the limited liability of DOE contractors, or, in the case of licensed facilities, for nuclear plant operators. It balances that liability against certain rapid and widely available compensation to the public who may be injured in the unlikely event of a major incident.

Likewise, it has the unique feature of channeling the financial protection coverage through the prime DOE contractor to our subcontractors, suppliers and vendors. The Department, frankly, has no other means of indemnifying its contractors that would provide this unique mechanism for protecting its contractors and its subcontractors from potential liability.

As you noted, the Department will not be authorized, after August the 1st of this year, unless legislation is enacted and extended, to incorporate Price-Anderson type provisions in any of our new or renewed contracts.

I would add that I believe, of equal importance, that a future without some type of Price-Anderson coverage for the commercial licensed facilities will inhibit our total collective ability to revitalize the nuclear power option in the near term, which many of us feel is essential to meeting the nation's growing energy needs in the nineties and beyond.

The Department clearly appreciates a move that would assure this will be continued for our facilities. I think it is important for all of us to collectively work together to try to keep the same framework of coverage for the future for commercial facilities.

We have been debating this renewal a long time. DOE and NRC first submitted their reports back in 1983. We have testified five times during the last two years on various legislative proposals.

We continue to support the views expressed in our prior testimony, including that in which we indicated that, with one exception, the key legislative provisions in the version of S. 1225, that Senator McClure and Senator Simpson originally introduced and was reported out by this Committee in May, 1986, would be the most acceptable.

We are also well aware there have been very many differing views. We recognize the efforts that were made by this Committee near the end of the last Congress in drafting a proposed compromise bill to reconcile these views.

Essentially, the bill you introduced yesterday has the key elements of that same compromise in it.

This Department is prepared to support such compromise legislation this session if the total package is one that will give us an acceptable framework for continuing the Department's nuclear operations under Price-Anderson.

There are two key elements in such a framework. A limitation on liability must be included for both our traditional nuclear activities and for our high-level waste and transuranic radioactive waste disposal activities.

It is important for us all to remember that this is a threshold limit which permits the Department to quickly act to compensate the public, including the case of an extraordinary nuclear occurrence where there is a unique mechanism for defenses to be waived to provide this prompt coverage. It is not an absolute limit.

Congress wisely chose to retain the right to review a major incident and its consequences before action is taken to pay claims above this threshold limit, and Congress should continue to retain that right, in our view.

Second, it is very important to the Department and the Administration that the legislation not include any provision, which was suggested last year and is still included in the bill you introduced yesterday, that would abrogate the sovereign immunity provisions of the Federal Tort Claims Act and inappropriately permit the government to be sued for its actions as if it were a contractor.

There are several other items that we believe are also significant to include in such legislation. In the area of high-level and transuranic radioactive waste storage, transportation and disposal, which has gotten a lot of attention, we believe it would be desirable to specifically identify these activities as being covered under the law, particularly in the waiver of defenses provision.

Likewise, we would note that payment for claims arising out of activities conducted under the Nuclear Waste Policy Act should be paid from the Nuclear Waste Fund.

Additionally, DOE continues to recommend that the liability limits for DOE contractors should be comparable to those for activities licensed by the NRC. While we would have preferred the lower liability limits originally in S. 1225 as reported by this Committee, we recognize the practical compromise in your bill at the end of last year and in the similar House bill which has been introduced by Mr. Udall and Mr. Sharp.

Finally, let me note that a reasonable limit on the statute of limitations should be included, and the three-year discovery period should be retained.

It is my view, with regard to these latter four items I have mentioned, that the bill you submitted yesterday takes care of those.

Therefore, in summary, we agree with the conclusion that we ought to proceed quickly to complete legislation for a reasonable extension. Indeed, little time is left before August the 1st. It is very difficult for the Department to wait until August 1st. There is great uncertainty in firming up contractual arrangements for activities beyond that date. There are a number of very major contracts for operation of our labs that are in negotiation now.

So, our reaction is that the time for debate is past and it is time to get on with it. We stand ready to support your effort. A major nuclear incident, in our view, remains extremely unlikely. I think the record speaks for itself, despite some aberrations that some may talk about, but for the major nuclear incident, the record remains excellent. It is a low risk probability, but in view of the consequences, we need the balanced indemnification and liability protection that is in Price-Anderson to enable us to continue to do business.

Any assistance that our Department can provide, in further comments or information, or whatever we can do, we stand ready to work with this Committee. My colleagues and I would be very pleased to respond to any queries you may have.

[The prepared statement of Mr. Vaughan follows:]

STATEMENT OF
JAMES W. VAUGHAN, JR.
PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR NUCLEAR ENERGY
U.S. DEPARTMENT OF ENERGY
BEFORE THE
COMMITTEE ON ENERGY AND NATURAL RESOURCES
U.S. SENATE

MARCH 18, 1987

Mr. Chairman, it is a pleasure to be here today to discuss extending and amending the Price-Anderson Act.

We appreciate this Committee's leadership in addressing this matter early in this session of Congress. The Price-Anderson Act is a forward-looking mechanism designed to assure the American public that their claims for injury will be promptly addressed and paid in the event of a major nuclear incident. Price-Anderson is a key factor in assuring the continued participation of the private sector in Department of Energy (DOE) nuclear programs and activities as well as ensuring the continued viability of this Nation's commercial nuclear power operations. The Department strongly supports a reasonable extension of the Act.

IMPORTANCE OF PRICE-ANDERSON TO DOE OPERATIONS

The unique umbrella protection provided by Price-Anderson continues to be invaluable in the conduct of the Federal Government's nuclear activities. The Department is highly dependent on products and services offered by various businesses, professional organizations, educational institutions, and other entities. Without continuation of the Price-Anderson Act,

contractors at all levels may well refuse to continue doing business with the Department, including those organizations with which the Department contracts to manage major Government-owned installations.

Price-Anderson balances the limited liability of DOE contractors (or nuclear plant operators for licensed facilities) against certain, rapid, and widely available compensation to the public who may be injured in the unlikely event of a major nuclear incident. Additionally, Price-Anderson "channels" financial protection coverage through the prime DOE contractor to subcontractors, suppliers, and vendors who sell, design, build, test, or perform other work or services on any component of a nuclear facility or device. The Department has no other means of indemnifying contractors that would provide this unique mechanism for protecting its contractors and their subcontractors from liability claims, while providing potential claimants a mechanism for prompt and assured payment of claims.

THE NEED TO CONTINUE PRICE-ANDERSON

On August 1, 1987, Price-Anderson authority to indemnify DOE contractors and cover new nuclear facilities licensed by the Nuclear Regulatory Commission (NRC) will expire. This will have little effect on existing NRC-licensed reactors, which are covered under Price-Anderson for the life of the reactor. However, DOE will not be authorized after August 1 to indemnify its contractors under Price-Anderson in new or renewed contracts

unless Congress acts now to extend this important provision of the Atomic Energy Act.

Of equal importance, a future without some Price-Anderson type of coverage would inhibit our collective ability to revitalize the nuclear power option in the near-term. The forward-looking structure and framework of the Price-Anderson nuclear insurance and indemnification system established by Congress in 1957 remains equally important today in assuring that our future electricity needs will be met.

LEGISLATIVE PROVISIONS

In 1983, DOE and the NRC each submitted their recommendations for extending the Price-Anderson Act. The subject has been debated extensively over the past 2 years, and we have testified 5 times during that period on various legislative proposals, including those introduced during the 99th Congress. DOE continues to support the views expressed in our prior testimony, in which we indicated that legislation similar to the version of S. 1225 reported by this Committee in May 1986 would be acceptable. We are also well aware that there have been differing views expressed on various key provisions of proposed Price-Anderson legislation, and that this Committee was instrumental near the end of the 99th Congress in drafting a proposed Senate compromise bill to attempt to reconcile these views.

The Department is prepared to support such compromise legislation this session if the "total package" is one that provides an acceptable framework

for continuing the Department's nuclear operations under Price-Anderson.

Two key elements of such a framework are:

- o A limitation on liability should be included for both the traditional nuclear activities (involving DOE contractor and NRC-licensed nuclear operations) and for high-level and transuranic radioactive waste disposal activities. Congress should retain the right to review an accident and its consequences before action is taken to pay claims exceeding this limit.

- o The legislation must not include any provision, which had been suggested by some last year, that would abrogate the sovereign immunity provisions of the Federal Tort Claims Act and inappropriately permit the Government to be sued for its actions as if it were a contractor.

In addition to these essential items, the following significant elements should also be included:

- o Regarding high-level radioactive waste storage, transportation and disposal, (1) these activities should have indemnity protection and liability limits equivalent to other DOE nuclear programs; (2) there are no peculiarities in waste that would argue for a separate scheme of protection; (3) the waiver of defenses provision should be modified to expressly provide coverage for waste activities; (4) within reasonable limitations set by the Congress, the public should continue to be assured of a timely and reliable source of funds for the payment of claims in the event of a nuclear accident; and (5) the payment for claims arising out of activities conducted under the Nuclear Waste Policy Act should be paid from the Nuclear Waste Fund.

- o Liability limits for DOE contractors should be comparable to those for those activities licensed by the NRC.

- o A reasonable limit on the statute of limitations, e.g., no more than 30 years, should be included and the 3-year discovery period for injury should be retained.

CONCLUSION

In summary, it is important that we proceed quickly to complete legislation on a reasonable extension of the Price-Anderson Act as early as practical in this session of Congress. The certainty of continued coverage under this unique legislation is important for both the Department and its contractors. Little time is left before the August 1, 1987, expiration date to remove the uncertainty that exists in firming up contractual arrangements for activities beyond that date.

We recognize that there are differing views on liability limitations, treatment of waste activities, and other provisions of the Act that have been debated in the past 2 years. However, the time has passed for debate and the time is at hand for action to provide a continuing system of indemnification and liability protection that balances the needs of contractors and nuclear facility operations with assured protection of the public.

The Department stands ready to support this effort. We hope our testimony and comments today, plus any further assistance or information we can provide regarding specific features of proposed legislation, will enable you to favorably report needed legislation to the Senate in the near future. My colleagues and I would be happy to respond to any questions you may have at this time.

The CHAIRMAN. Thank you very much, Mr. Vaughan. I am going to withhold my questions at this time in favor of Senator McClure, who must be at a 10 o'clock meeting.

Senator McClure.

Senator MCCLURE. Thank you very much, Mr. Chairman. I do appreciate your allowing me to ask a question at this time. I would be here, with the exception of the requirement that the Select Committee on Iran is meeting at 10:00 o'clock and I must be there at that time. I hope to return before the end of this hearing.

Mr. Secretary, the Administration objects to a provision of our bill that would allow the Price-Anderson system to apply, even in the unlikely event that a federal employee, rather than a contractor, was directly involved in the activity that resulted in the accident.

The objections, as I understand them, are based primarily on the premise that this represents a huge exception to the Federal Tort Claims Act, by which all government suits are processed.

Am I correct that that is the reason for the objection?

Mr. VAUGHAN. That is the objection. That is the reason for the objection.

Senator MCCLURE. Do you not agree that to all intents and purposes the entire Price-Anderson system is already a quasi-loophole in the Federal Tort Claims Act?

Mr. VAUGHAN. Senator, very respectfully, I do not agree that it is a major loophole. From a policy point of view, Price-Anderson is, and always has been, a mechanism for suits against private parties and not the federal government. It does contain the unique provisions for balanced waiver of defenses in certain cases, and for prompt payment of claims. DOE is kind of unique in the way it indemnifies its contractors.

Senator MCCLURE. Could I interrupt there?

Mr. VAUGHAN. Surely.

Senator MCCLURE. If it is the mechanism by which the public can bring suits against the federal government for its activities, that is, by definition, an exception to the FTCA, is it not?

Mr. VAUGHAN. No. The suits are brought against the private contractors in the case of Price-Anderson indemnification, and the government has indemnified them.

Again, the public is not precluded from suing the government under the Federal Tort Claims Act, as I think we all well know.

Senator MCCLURE. My understanding is the Department claims that the situation where a federal employee has actually performed the DOE work will never happen. If that claim is correct, why do you object to this provision?

Mr. VAUGHAN. There are——

Senator MCCLURE. Is it just a matter of theory?

Mr. VAUGHAN. Well, I do not think it's a matter of theory. Let me let Ms. Kuznick amplify this.

Senator MCCLURE. All right.

Mr. VAUGHAN. She has worked carefully with the Justice Department on this question. Let her amplify it a little bit.

Senator MCCLURE. Maybe in view of my time, I could ask that you amplify the record by an answer for the record. Would you do that?

Mr. VAUGHAN. We would be pleased to do that.

Senator MCCLURE. I thank you. I hate to rush through this, because I think it is a very important point.

Mr. VAUGHAN. It is a very important subject.

Senator MCCLURE. That is the reason I took the time to raise it now, because I want the record to be very precise on this point.

The reason we put the provision in the bill was to ensure the public that they would never be faced with a loophole in the Price-Anderson system of compensation.

We have asked the Department of Energy, as well as the Department of Justice, to suggest other options that would assure the public that they would never be faced with a loophole situation. Yet, to date we have not received any useful or workable proposals.

I would ask that if you have a useful or workable proposal as an alternative to this provision, you submit that for the record, too.

Mr. VAUGHAN. All right. Senator, we would be glad to do that. The Department of Justice, as well as the Department of Energy, is very concerned about the precedential nature of changing the Federal Tort Claims Act.

Senator MCCLURE. I submit it already has been changed. You say it has not.

Mr. VAUGHAN. We do not believe it has.

Senator MCCLURE. I do not believe, from my standpoint, dealing with this particular kind of question, that it is a sufficient answer to say, "All right, you can sue under the Federal Tort Claims Act."

I think this requires an exceptional response. We are trying to give it. If your only answer is, "We do not want any exceptions," that is fine, I will understand what you are saying, although I will disagree.

Mr. VAUGHAN. We do not want any exceptions, but we would be willing to continue to try to work with the Committee and the staff to see if there is some middle ground here.

Senator MCCLURE. Mr. Chairman, thank you very much for permitting me to ask these questions at this time. I have some other questions which I will submit for the record.

The CHAIRMAN. Mr. Vaughan, under the Tort Claims Act exception contained in this legislation, is there a right to get punitive damages from the United States? I do not recall any.

Ms. KUZNICK. The Federal Tort Claims Act does not——

The CHAIRMAN. No, I know that you can under the Federal Tort Claims Act, but can you under this legislation?

Ms. KUZNICK. Under the Price-Anderson Act? It is not clear whether or not a DOE contractor could be liable for punitive damages under the present Price-Anderson Act, or whether the federal government would then have authority to indemnify the contractor for such damages. That has never really been tested, and I think it is unclear even after the Silkwood decision, which did address the issue of whether or not punitive damages are prempted by the Atomic Energy Act. It did not address the issue with regard to DOE contractors who would be indemnified by the federal government.

The CHAIRMAN. Well, in our mark-up last year we took out punitive damages where the United States would reimburse the liability of a contractor, on the theory that the government should not

be paying, you should not be punishing the government. To the extent that we have the waiver of Federal Tort Claims Act, a direct suit against the government, we ought also to take out punitive damages against the federal government, in my view.

Mr. VAUGHAN. We agree with that view, Senator.

The CHAIRMAN. Now, do you agree that if we fail to act that present civilian reactors will be protected under the existing Price-Anderson Act during the term of their licenses?

Mr. VAUGHAN. That is our understanding, Senator Johnston.

The CHAIRMAN. How many of these new reactors coming on line would not be covered?

Mr. VAUGHAN. Excuse me just a second.

The CHAIRMAN. Are they all covered once they get their construction license?

Mr. VAUGHAN. Let Mr. Saltzman answer that, because while he is now representing DOE, he used to be at NRC on the staff and I think he can probably provide a good answer to that.

Mr. SALTZMAN. Mr. Chairman, it is my understanding that there are no reactors presently in the pipeline that do not have construction permits, and therefore there are no reactors that would not be presently covered under the Price-Anderson Act.

The CHAIRMAN. So all civilian reactors would be covered?

Mr. SALTZMAN. Correct.

Mr. VAUGHAN. If I could just reemphasize, though, I would hate to see us send the signal to those who believe in the need for nuclear power for the Energy Security of this nation that we cannot continue Price-Anderson coverage, because that has been one of the institutional roadblocks, along with others, that hampers the renewal of that effort.

That was cited by the Secretary yesterday in the Energy Security study as one of the major federal efforts that we need to continue to pursue. So I would really hate to see us send that negative signal.

The CHAIRMAN. All right. With respect to our limited contractor-only legislation presently introduced, if we should pass that and not pass the broader view, then does everyone have coverage under one version or the other of Price-Anderson? Existing reactors under present Price-Anderson and everyone else, would there be any gaps in that coverage?

Mr. VAUGHAN. That is correct. You would have an aberration in the sense that the liability limits for the currently operating reactors, commercial reactors, under the existing Price-Anderson would be much lower than the liability limits in the contractor-only bill as drafted, but yes, everybody would be covered.

The CHAIRMAN. All right. Well, that is fine. We are going to persist in trying to get that agreement brought back to life, as I mentioned earlier. I am glad to hear that there are no gaps in coverage, however inadequate the coverage may be under the present law.

Now, would you tell me, why is it you say that contractors might be unwilling to do business if they are not covered for gross or willful negligence?

Mr. VAUGHAN. In simple, logical terms, most of these contractors are operating DOE-owned facilities for a relatively small fee, compared to commercial profit-making enterprises. It is the tradition,

the unique tradition of the government-owned, contractor-operated facility. It is good for their professional, national reputations, but they are not at risk. If claims resulting from willful misconduct or gross negligence, which are ill defined, imprecise legal terms and do not have a clear meaning, were excluded from the indemnity, contractors would probably have to get some private insurance, which is not very readily available these days, would be prohibitively expensive, and I think the cost to the government, frankly, would go higher than under the present full government indemnification system.

I think it would end up costing the taxpayers prohibitively more money for no real benefit. If you look at the history of Price-Anderson, it has been a public assurance mechanism that has worked well for thirty years. It is a very low risk, but if it occurs, high causation probability type event, you simply look at the amount of claims we have paid in the last thirty years. It is a small number, way below the currently proposed liability limit.

The CHAIRMAN. We understand that the risk is very small. I am simply zeroing in on the statement that they would not do business with the federal government. Senator Metzenbaum says that they do business in nuclear matters in other areas and that they would do business here.

Senator METZENBAUM. They do it with the Defense Department.

The CHAIRMAN. Tell us why it is that you think they would not; why there is a difference between this and the Defense Department.

Senator METZENBAUM. It is a smart time to shift the question, I think, Mr. Vaughan.

Ms. KUZNICK. There is a distinction between our relationship with our contractors and the relationship of the Defense Department and other government agencies to their contractors. We have a very unique relationship in that our GOCO contractors, who operate our the Government-Owned, Contractor-Operated facilities, do not do business for anyone else but the Department, and we reimburse them for all of the costs associated with that work, plus a fee.

Because we are completely in control of the facilities, we have a very special relationship with our operating contractors. They operate government property, and we tell them how to maintain the property. So there is a basic distinction.

Also, the Department of Defense does not handle nuclear activities in the way that the Department of Energy does. Once the nuclear materials go from the Department of Energy to the Department of Defense, they generally are handled by uniformed personnel as opposed to contractor personnel. That is another basic distinction.

Senator METZENBAUM. What evidence do you have that they wouldn't do business with you, as they do business with the Department of Defense? Is it a figment of the imagination, or do you have some substantive evidence that indicates that you are right?

Ms. KUZNICK. Well, I know that we have some contractor representatives here today who are going to testify before you, and I have spoken to them and many other contractors. They have informed me that they cannot get nuclear liability insurance to cover

their activities, and I think that responsible entities will not do business when they can be exposed to enormous liability claims. Every other business can obtain either liability insurance or some other financial protection. Businesses do not expose themselves, if they are responsible entities, to enormous potential liability claims.

The CHAIRMAN. So it is not that the insurance is too expensive, it is just they cannot get insurance.

Ms. KUZNICK. We think it would be unavailable, completely unavailable.

Senator METZENBAUM. Did not they get it up until 1957?

Ms. KUZNICK. No, they did not have insurance. They were indemnified by the AEC, or the Manhattan Engineer District, prior to 1957. Those indemnities excluded claims resulting from willful misconduct of top corporate officers of that company.

Senator METZENBAUM. The top officers were not protected on the basis of willful misconduct; is that what you are saying?

Ms. KUZNICK. In some of the contracts, that is true. That was the way the indemnity was written prior to 1957.

Mr. VAUGHAN. Senator, it was in some but not all of the contracts. There was a wide variation, and that was long before this subject of malpractice or willful misconduct or gross negligence, or these undefined terms, became very popular.

I think we all recognize we have seen a real change in the legal and insurance system in the last ten or twelve years. The situation is much changed.

Senator METZENBAUM. I want to be certain that I am clear on the facts, Mr. Chairman, that some indemnity agreements did not cover losses due to willful misconduct or bad faith of a corporate officer of the contractor. That included Union Carbide and DuPont.

And in others, contractors accepted responsibility for damages from the willful misconduct or bad faith of representatives having general supervision and direction of the performance of the work, as well as intermediate company officials. That included GE, University of Chicago, Goodyear, and Westinghouse.

Phillips Petroleum, which operated a national reactor testing station in Idaho, accepted responsibility for bad faith, failure to exercise degree of management responsibility required by ordinary business standards, actions taken without approval of the AEC when approval was required.

What we are talking about here is not just negligence or some kind of misconduct. We are talking about gross negligence or willful misconduct, which are terms of art under the law. We understand what they mean. Here we have the Department of Energy appearing before us saying that you do not want those provisions in the law, even though, when you appeared before the Environment and Public Works Committee, your Department stated it did not believe it was necessary to recover costs from contractors who committed acts of gross negligence or willful misconduct, that it would not object to such a provision, and you reversed your position on that afterwards.

Senator BINGAMAN. Mr. Chairman, I do not mean to interrupt you.

Senator METZENBAUM. I am asking you, how come you changed your position after that testimony was given at the Environment Committee.

Ms. KUZNICK. We reviewed the situation very carefully, because we realized this was a very important issue, the accountability of our contractors and the responsibility for accidents. After further review, we concluded that there was no need for a change in the Price-Anderson system in this regard.

Since 1957 we have provided a complete indemnity, and although the contractors had accepted an exclusion prior to 1957, since 1957 the contractors, the suppliers, the vendors, and anyone who does business with our contractors, has been assured of complete indemnity.

If we were to change the system now, at this time, with a crisis in the insurance market, we would have a very difficult time finding any responsible contractors.

Senator METZENBAUM. You are just speculating, are you not, Ms. Kuznick? You do not have any proof of that. These people tell you that. You do not know whether they can get insurance, you do not know whether they would walk away from the contracts.

They are taking contracts from the Department of Defense, and you are coming here and you are just taking their position and saying, "Well, this is what they are saying." Well, how do you know that is the case?

Mr. VAUGHAN. I think the contracts with the Department of Defense, by and large, are not for, as a typical example of what Price-Anderson was written for, operating a nuclear facility or a nuclear reactor or a nuclear materials production facility. They are for quite different things, where the nature of the risk, even though the probability is low, is not nearly so high.

Senator METZENBAUM. Would you repeat that, please, Mr. Vaughan.

Mr. VAUGHAN. Well, Price-Anderson, classically, was written for unique, major nuclear accidents; low probability, high-consequence events. Operating a nuclear reactor with stored energy is the classic case.

These contractors doing business with the Department of Defense are not doing those kinds of nuclear operations. It is just a different set of circumstances from what Price-Anderson was intended to cover.

Senator METZENBAUM. It may be a different set of circumstances, but the fact is, in an annual report to Congress, it appears that the same people who have contracts with you have contracts with the Department of Defense; Rockwell International, General Electric, Westinghouse Electric. They have a number of contracts. General Electric has seven, as a matter of fact. Boeing has two. Martin Marietta, three.

I have difficulty in understanding why the Department of Energy is here, carrying the water for the contractors without a scintilla of evidence to support your position that you could not get contractors.

Frankly, I do not think the evidence is there. I think you will get the contractors. But at least we in Congress have a right to make——

You say it will cost the taxpayers more. Let me say something to you, Mr. Vaughan. I think you are a hundred percent wrong. The reason I think you are a hundred percent wrong is that today a contractor doing business with you does not have to care anything at all about protecting the public, being concerned about its conduct.

So it can be guilty of gross negligence, willful misconduct, and say, "What is the difference? Cannot cost us anything." If you put some pressure on them to maintain standards, to provide some protection, it is very likely that the costs will come down rather than go up.

I do not understand why a public body is here advocating a position the contractors are fully able to advocate for themselves. It seems to me that somehow you have been prevailed upon to switch the position that you took at an earlier point. That's giving me difficulty.

In fact, you made this statement, January of 1986, the Secretary of Energy stated: Although the Department will continue to indemnify its management and operating contractors for fines, penalties, and other liabilities that are incurred pursuant to their contracts, and not the result of willful misconduct or lack of good faith, it is DOE policy that contractors will share the DOE's commitment to good environment management.

I do not understand where you are coming from, in view of some of the previous statements made.

Mr. VAUGHAN. Well, Senator, we did give it more careful consideration, as Ms. Kuznick indicated. You and I have had this discussion several times in this same room. This is not new. We simply do not agree.

I would submit that the record shows that, over a period of time, Department of Energy contractors, with very few aberrations, have acted very responsibly in protecting public health and safety in carrying out their operations. They have their professional reputations at stake.

They do not get their contract renewed if they do not perform well. They can get their award fee docked if they do not perform well on safety matters. There are numerous other methods for getting good contractor performance, such as continued DOE oversight and enforcement, which have absolutely nothing to do with the Price-Anderson Act. The Price-Anderson Act is not the place to address contractor conduct, because there are far more things that you want them to do that are beyond what the scope of the Price-Anderson Act is.

Senator METZENBAUM. You say that they have acted responsibly, and yet we know of the concerns that have been in the public press. We also know, and certainly there has not been only one of them, there has been a number of them, including problems in my own State.

We had within the last few days a plant in Ohio that was to go on line and they were going to show that they were fully prepared for any emergency, and just before they were to turn it on, it cut out on its own, or it cut out and they were not sure why.

The answer was that somebody hit a lever by mistake. It is pretty hard to accept that, but I do not know what the facts were. It just seemed to be incredible.

Yesterday, the GAO stated as follows: In a September 1986 report we reported that DOE operations have contaminated groundwater at eight of the nine facilities reviewed.

They go on to say, in a September 1986 report: We found that four out of nine facilities were not in full compliance with the Clean Water Act, and none had final permits for disposing of waste under the Resource Conservation and Recovery Act.

Then another statement from Mr. Winston Porter from the U.S. Environmental Protection Agency said: Since fiscal year 1985, fifty-two EPA inspections and a hundred and fifteen state inspections have been conducted at the twenty-nine DOE treatment, storage, and disposal facilities. Forty-three notices of violation and ten enforcement actions have been taken at these DOE facilities since fiscal year 1985.

Do you want to change your testimony that they have been doing such a great job and that you are very pleased with what they are doing and you do not need this kind of pressure on them?

Mr. VAUGHAN. Senator, you are, in many of your examples, mixing up environmental compliance issues with the subject of major nuclear incidents covered under Price-Anderson.

Senator METZENBAUM. I am not mixing them up. I am showing you that they are not doing such a great job. If they violate some laws over here, we may not know what they are violating over here.

Mr. VAUGHAN. This is not a question of violating the law. It is a question of operating facilities so you do not have a major nuclear incident.

For example, in the case of Fernald, which is in your State, I think some of the same reports you have cited have indicated, while there have been some environmental problems, that they have not harmed the public.

We are here talking about Price-Anderson. It is a mechanism to protect the public for damage off site, and many of the things you are talking about are on site. You know as well as I do that the contractor that had been operating Fernald was replaced in order to improve management, including environmental controls, and improvements are being made.

I did not say that every contractor was perfect, but I said by and large, the record over thirty years shows responsible management and attention to protecting public health and safety.

Senator METZENBAUM. Mr. Vaughan, let me make it clear that when I refer to environmental problems and other problems that have been cited by the GAO, as well as the Environmental Protection Agency, I show them to point out to you that your statement that there has not been a sense of responsibility on the part of your contractors.

Your response to me is, "Well, Senator, we are only concerned, we are talking only about the fact of whether or not people's lives have been endangered by reason of the nuclear facility, the nuclear operation."

I am happy to say to you that so far we do not know of any of those in this country. But if you have a contractor who is irresponsible with respect to environmental protection, there is no logical reason to assume that he is any more careful in connection with other aspects of their operation.

If you are doing something wrong, if you do not care about abiding by the law, generally, and these contractors obviously have not cared about abiding by the law, then we have to wait in order to get some protection here or to place some responsibility. Do we have to wait until we have a major disaster?

That is my point. I am not willing to wait until that occurs.

Mr. VAUGHAN. Senator, we obviously do not have to wait. Please let me clarify for the record, I think either I misspoke or you misinterpreted what I said. The Department is clearly concerned about all of its contractors complying with all regulations that protect the public health and safety, be they environmental or be they related to reactor operation, or whatever.

I was trying to draw a distinction in terms of how we deal with Price-Anderson versus how we deal with other laws.

As you well know, we are continuing to strive to upgrade our environmental posture, as standards shift, become more stringent and public concern becomes greater on those matters. So there is no diminution of attention by the Department of Energy on those subjects.

Senator METZENBAUM. I want to come back to your broad statement of the quality operations that you are getting from your contractors.

If you were getting such quality operations, you would not have had to order the two Hanford plutonium plants shut down for failure to have safety precautions.

What I am saying to you is, if you put some pressure on these contractors and not permit them to be guilty of willful misconduct or gross negligence, then you have got a much better chance of having a better operation.

You ought to be here on our side, supporting this change, rather than on the other side, claiming you cannot get contractors to do the job without any evidence at all to support that.

Mr. VAUGHAN. In the Hanford case, there were no examples of unsafe operations. That reactor has been shut down to make additional safety improvements. It is an old plant and it is a prudent thing to do.

Senator METZENBAUM. Senator Wallop.

Senator WALLOP. Thank you, Mr. Chairman. I just would observe that I think it is possible to cite any number of major employers in Ohio or anywhere else who, from time to time, are cited for environmental violations. But because they have that instance on their record does not imply that they are irresponsible citizens of the State of Ohio or the State of Wyoming or anywhere else.

I do not know how often you have tried to comply with some of the shifting sands on which EPA and others walk, but it is not within the possibility of modern man to keep up with those changing demands.

I would just say that the record speaks for itself in terms of the safety of the nuclear energy industry in this country. I think the

fact that we are sitting here making a judgment on how they operate the nuclear facilities cannot, by inference, in any legitimate way, be drawn from the way they have conducted some other things in an environment which is always changing, Senator.

Senator METZENBAUM. I would just respond and say that just because we came within a hairbreadth of avoiding disasters, we certainly all know about the Three Mile Island situation, there was another one that I remember hearing about just in the last several weeks where there was within seven minutes of a catastrophe occurring when it was discovered and the problem was solved.

I would just say to you that I do not think it's you against me or me against you. I think what we are talking about here is saying to the general contractors, "You have some responsibility to attempt to maintain a standard of care." We are not saying to you that you are going to be held responsible——

Senator WALLOP. Let me just observe that on my way to work this morning I came within a thirtieth of a second of a disaster, and I have a responsibility to conduct my automobile in a way which provides safety for me and the public. I managed to do it. But I did come within a thirtieth of a second of disaster.

Senator METZENBAUM. Well, we are grateful to you and anybody else there.

Senator WALLOP. Well, the point is that to come within 7 minutes of an accident does not mean to come to it. At some moment in time, one has to realize that there are intelligent people doing their damndest to comply with the requirements of an ever-changing regulatory regime.

I appreciate Mr. Vaughan's and the Administration's position of general support for the legislation in front of us.

Mr. VAUGHAN. Senator Metzenbaum, if I may. Since you raised TMI, I think it is important to get that perspective on the record.

As bad an incident as Three Mile Island was, and as much as it resulted in property damage to the utility, the protective system to protect the public off-site worked, and the total amount of claims that had to be paid under Price-Anderson was in the range of some forty to forty five million dollars.

That is an example of how the design of the facility and the operation, although some mistakes were made and it is costing a lot to clean up in terms of property damage, did adequately protect the public health and safety.

Senator METZENBAUM. Thank you very much, Mr. Vaughan, Ms. Kuznick and Mr. Saltzman.

The CHAIRMAN. Our next witness is Professor Arthur Murphy, Columbia School of Law.

Professor Murphy, we would be glad to hear from you.

STATEMENT OF PROF. ARTHUR W. MURPHY, COLUMBIA UNIVERSITY SCHOOL OF LAW

Mr. MURPHY. Senator Metzenbaum, Secretary Vaughan started out by saying it was a pleasure to be here. My feeling is more one of deja vu.

I first testified before a Congressional Committee, the Joint Committee on Atomic Energy, on this subject almost exactly thirty

years ago. At the time, I had just finished directing the study of what was called the atomic insurance problem for the Legislative Drafting Research Fund of Columbia University on behalf of the Atomic Industrial Forum. The original Price-Anderson Act incorporated many, but not all, of the recommendations of that study.

Most recently, two years ago, I testified before the Subcommittee on Energy and Environment of the House Committee on Interior and Insular Affairs. Much of what I have to say generally about Price-Anderson will be a repeat of what I said there.

I probably should flag the fact that my prepared remarks are basically directed to the provisions dealing with licensees. I would be happy to answer questions about the contractor program to the extent that I can.

I would like to start my discussion by noting that the Price-Anderson Act has been remarkably successful. It has accomplished one of its primary objectives, making it possible for participation of private industry using its own funds in the development of nuclear power.

As to the second objective, protection of the public, the Act has not, thankfully, really been tested, although the experience at Three Mile Island, particularly the quick response of insurers, is reason for optimism, it still has not been tested.

It can be said, however, that no member of the public has gone uncompensated for injuries resulting from nuclear activities covered by the Price-Anderson Act. Moreover, this has been accomplished at very little, if any, cost to the government.

There are few statutes in existence for thirty years that have cost the government less and achieved more in terms of furthering avowed government objectives.

It is also worth noting that the protection afforded to the public is real. Assuming an accident causing enough off-site damage to be classified as an extraordinary nuclear occurrence, a person injured is spared many of the problems of the ordinary tort plaintiff. He or she need only establish that the injury was caused by the nuclear accident; the Act supplies an identifiable, financially responsible defendant, unless the accident caused damage in excess of $635 million. I think that now should be $700 million.

Even if the accident were to bankrupt the utility operating the facility at which the accident occurred, payment of a judgment would be assured by the required financial protection made up in part of private insurance and in part of retrospective assessments against utilities operating nuclear plants.

The retrospective assessment system is, I think, an under-appreciated feature of Price-Anderson. It represents a unique assumption of liability by persons who will have had no contact with an accident.

It is different from enterprise liability, where the defendant held liable might, in fact, have caused the damage, although causation cannot be established. Under the retrospective assessment system, all but one of the utilities paying the damages would have had no connection with the accident.

These obvious advantages to potential plaintiffs of Price-Anderson over standard tort liability have not been lost on some who would amend the statute.

Unlike earlier calls for repeal, many who would amend Price-Anderson today want to keep the benefits but get rid of what they see as the major disbenefit, the limitation on liability.

In my view, it will not work. The cap on liability is an essential part of the system. If you eliminate that part, you will sacrifice the benefits.

To begin with, the private insurance market would, in all likelihood, be fragmented. No longer would suppliers be able to rely on the insurance of the operator. Each supplier would have to buy his own coverage, and the competition for coverage would almost certainly have the effect that the entire amount of coverage offered by the insurance industry would not be available to cover a single accident, as it is now.

Moreover, I do not see how the retrospective assessment system can survive. There has to be some quid pro quo for the unique assumption of liability for accidents unconnected with the utilities operation. It seems inevitable to me that the removal of the limit on liability will in time dismantle this whole scheme and leave nuclear incidents to be regulated by the regular tort system.

The belief that the tort system will produce a better result for persons injured, even in the event of a catastrophic accident, is widely held, as is the notion that while special treatment may have been justified for the infant nuclear industry in 1957, now that it is mature the usual ground rules should be restored.

Indeed, this latter notion is raison d'etre of our periodic revisits to the subject. The initial Congress put a ten-year limit on the statute in the hope that by 1967, quotes, the insurance people would have a sound program of their own, close quote.

That hope, and there are echoes of it today, is attributable in large part to a failure to understand that the kind of risk we are concerned with, a very small chance of a very bad accident, is not amenable to our system of tort law and insurance.

This misunderstanding is an important element in the opposition to Price-Anderson. Some of the opposition is, of course, thinly veiled opposition to nuclear power itself. But even many supporters of nuclear power have never understood the need for the Act.

In part, that misunderstanding is based on the misunderstanding about the insurance market, on a belief clearly contrary to fact, that the premium charged for a vanishingly small risk will be equally small. In large part, it is based on assumptions about how the tort system works, or will work in the event of a catastrophic accident.

It is hard for me to understand the infatuation with the tort system, except by lawyers. It is true that the tort system makes possible the individualization of justice in some cases, but we pay a high price for that seldom realized possibility.

Even in a noncatastrophe situation, there are many problems with the system. Considerably less than one-half of what it costs defendants is paid to plaintiffs. The system tends to undercompensate the seriously injured and overcompensate some others.

This is not a place to argue the merits of the tort system, but I think it is worth pointing out that, judged as a system for providing compensation for physical injuries, most observers regard it as deficient.

In the case of catastrophic accidents, it seems clear that the tort system will not work at all well. Indeed, it is ironic that proposals for restoring the customary tort rules for nuclear accidents are being made at a time when, in other areas, we are looking for alternatives to those rules.

A few years ago, Chief Judge Jack B. Weinstein of the United States District Court for the Eastern District of New York addressed the American College of Trial Lawyers on the subject, should the law develop better ways of compensating those injured in man-made disasters.

Judge Weinstein, who presided over the Agent Orange litigation, stated that in the case of major disasters there probably needs to be a cap on the total cost, a method of allocating the cost among defendants, and a sure source of funds, and cited the Price-Anderson Act as a possible model.

That Judge Weinstein should be making such a talk, of course, reflects new insights into the problem of liability for catastrophic accidents forced upon us by asbestos, Bhopal, and the disposal of hazardous wastes, all of which have made apparent the inability of the tort system to cope with massive liabilities.

In terms of the tort system, the tragedy at Bhopal is the closest analogy to a possible catastrophic reactor accident we have seen. We have seen Chernobyl, but the Soviet Union does not have anything that is like a tort system, so we can discount that.

Had Bhopal happened with the same severity in the United States, Union Carbide almost certainly would have been thrown into bankruptcy and, except for emergency aid, persons injured would be years from getting anything by way of compensatory damages.

It is worth noting that in the actual Bhopal case almost nothing has been paid to the victims of the disaster for several years.

The CHAIRMAN. Almost nothing has been paid, you say?

Mr. MURPHY. Almost nothing has been paid. There was some immediate assistance, much of which seems not to have been distributed, but essentially nothing has gotten into the hands of the plaintiffs.

The CHAIRMAN. What is going to happen in Bhopal, in your judgment?

Mr. MURPHY. Well, I lived for a year in India, and I am not sure I would care to hazard a guess. I think the Indians are at least as able as we are to carry on litigation for years. I do not see anything happening there for a long time, unless there is a settlement, which there might be.

The CHAIRMAN. Once the court rules, are they likely to rule according to traditional Indian standards in terms of quantum of relief, or are they likely to take the American standard?

Mr. MURPHY. Well, I think nobody really knows. The truth of the matter is that India has not had, until now, a very well-developed system of tort law. There is a lot of litigation that goes on in India, but very little of it is tort litigation; mostly it is about property and titles and marriage and divorce.

I think that there is a tug-of-war going on, and I am not sure how it will come out. I think if India were to adopt standards comparable to American standards of compensation, you might have a

serious problem of enforcing those judgments against Union Carbide, U.S.A. They can always enforce them against the Indian company. But there would be, I think, serious problems of fairness in applying American standards of damage compensation to Indians.

The problems of Bhopal go far beyond that. I think it is highly likely that they do not know who half the people who were killed in Bhopal were. I think it is highly unlikely that they will be able to trace many of the people who were injured. I think it is unfortunate, but I think it is true that the Indian Government has not done very much about doing that yet.

I do not think we would have that kind of a mess in the United States, but I think we would still be in the pretrial phase, without anything having been paid, except something by way of emergency compensation, had the accident happened here.

I do not mean, of course, to suggest that the compensation provided by Price-Anderson will necessarily be fair. Obviously, in a worst possible case, it would not. But putting a cap on the liability does not mean that recovery must be limited to that amount.

When I first testified on the Price-Anderson bill, I opposed the limit on liability and advocated an unlimited government indemnity. That proposal, which the Columbia study had made, was rejected by Congress, although Congress did enact a promise to look at the situation if damages exceeded the limit on liability.

I still feel that in any overall solution, some governmental input will be necessary. However, it is clear to me that we should not try to deal with the question of an appropriate governmental role in responses to catastrophic accidents in the context of nuclear power alone.

What is at issue is a fair allocation of the burden of accidental injury. My own view has always been that the people injured should not be called on to subsidize the rest of us. But that does not mean that we need to swallow whole the tort system's extravagant cost, a cost which has reached the point where defendants are willing to pay hundreds of millions of dollars to settle claims they feel are without merit rather than to litigate them.

What the details of the allocation should be, is obviously a subject on which a great deal of thought is needed. I have little doubt, for example, that punitive damages should be forbidden.

If an accident is caused by conduct reckless enough to warrant punitive damages, the punishment should be left to the criminal law.

The CHAIRMAN. You mean in general or in Price-Anderson?

Mr. MURPHY. Well, I am talking specifically in Price-Anderson.

The CHAIRMAN. Have you studied the legislation which I introduced yesterday as S. 748?

Mr. MURPHY. If I were a student, I would say yes. The truth is I looked at it, but I have not studied it.

The CHAIRMAN. Do you think that would permit punitive damages?

Mr. MURPHY. Well, my quick reading, and I do not have it here——

The CHAIRMAN. I should be able to tell you that.

Mr. MURPHY. My quick reading was that it was an effort to provide that punitive damages would not be paid in any case in which the government was called on to indemnify a contractor.

The CHAIRMAN. Yes. We definitely put that in. We did that last year. Can the government be held for punitive damages?

Mr. MURPHY. Well, they cannot under the Federal Tort Claims Act. They could not, if I am reading this statute correctly, they could not be—it says: No court may award exemplary or punitive damages under state law in any action with respect to a nuclear incident against a person on behalf of whom the United States is obligated to make payments.

I would think clearly they could not in the case of contractors. I do not know whether this was intended to or would have any effect on punitive damages in actions against licensees. I would have to look at that.

The CHAIRMAN. Well, this was meant to cover only those where the United States was to indemnify.

Mr. MURPHY. Would indemnify. I think there's a question. I do not think the question has been solved. The Supreme Court said a lot of things in the Silkwood case about punitive damages, but Silkwood was not a case arising under Price-Anderson and it is not clear to me exactly what the status of punitive damages would be.

The CHAIRMAN. Should we allow jury trials under Price-Anderson?

Mr. MURPHY. Well, I do not know. When we were looking at this back in 1956 and 1957, we essentially took the position that we ought to let state law ride. The late Representative Sterling Cole was very insistent at the time that we ought not to intrude in state law in this particular area, and so it seemed impractical at the time to make a proposal which would have made any serious inroads into Price-Anderson.

I still feel the way I felt then, that, as I say later on in my remarks, I think at least so far as the licensee program is concerned, we are talking about one serious accident. If we have one serious accident, the chances are we will shut down the civilian nuclear power program, at least for a time, and maybe forever.

I do not think it makes sense to get too greatly into details about jury trial and whatnot. We can handle them after the fact on some emergency basis. I do not happen to be a very strong believer in civil jury trials in any case.

The CHAIRMAN. I share your skepticism about that, having been an old trial lawyer, and mainly on the plaintiff's side, we thought we could get juries sometimes to do magical things. I think juries are particularly ill-equipped in areas of nuclear matters that are so scientific. They will not have the foggiest notion, they will react from emotion or prejudice or whatever, maybe to the benefit of plaintiffs, maybe not.

I also think you are probably right, it is not worth the effort to try to go in and change state law in that respect, because I do not think one of these accidents is going to happen.

What we are really dealing with is the cost of insurance, cost of doing business, for an accident that is not going to happen; and if it does, well, the game is over anyway.

Mr. MURPHY. To continue, I say whether damages for pain and suffering are appropriate is a more difficult question. In other countries, and in our country in workers' compensation cases, one of the tradeoffs for strict liability is an elimination of pain and suffering as an element of damages.

What can we do to deal with long-delayed injures, sure to be a large component of damages from a radiation accident? But like the question of an appropriate governmental role, these questions are, I think, best handled in the context of a consideration of all kinds of catastrophic accidents.

Given the very small probability of a catastrophic reactor accident, it still makes sense, as it did thirty years ago, to avoid elaborate mechanisms to deal with an accident that may never happen.

If we were writing on a clean slate, my recommendation would be to simply extend Price-Anderson without a termination date. By now it should be realized that we will never have enough experience to make catastrophes amenable to the tort system. Even if we were to experience an accident causing significant off-site damage, the factors affecting the amount of damage off-site are so infinitely variable that it is impossible to predict with any accuracy.

Such a simple extension does not seem to be in the cards and the question, as I see it, becomes whether the proposed substitutes depart so far from the rationale of the original Act as not to fulfill its purpose.

In making that assessment, I think it is important to remember that we are, in reality, talking about a system to deal with one nuclear incident.

I have always felt that was probably true, and since Chernobyl I have become convinced that a domestic nuclear accident causing extensive off-site damage will shut down our nuclear power program for a long time, if not permanently. If that is true, the burden of retrospective premium assessments will be extremely heavy on those companies which have a large number of operating reactors which will not be allowed to operate.

As I said two years ago, I have no serious objection to raising the limit on liability to a billion or even two billion if industry feels it can live with the risk of a larger retrospective assessment.

There is a surface plausibility to the idea that if $500 million was fair in 1957, it cannot be fair today. The difficulty I have with raising the limit on liability is that the new number has no more basis in fact than the old. $500 million was an arbitrary number in 1957, and maybe as valid today as it was then.

I cannot, of course, speak for industry. If I were a public utility, I do not think I would support the bills which would raise the limit on liability to six or seven billion dollars.

It does not make much sense, to me, to accept much larger potential liability on existing reactors for extension of protection to future reactors which are not likely to be built for a long time, if ever.

My understanding is that of Secretary Vaughan's, that there is nothing in the pipeline which is not covered by Price-Anderson, so that all existing, or reactors likely to come on line, are presently covered.

Be that as it may, I think that the setting of a limit of liability at six or seven billion dollars is unwise. We are dealing, as we were thirty years ago, with the possibility of an accident which may never happen; indeed, probably never will happen.

It makes no sense to impose costs now to provide for such an accident. The retroactive assessment system does not appear to be without present costs. At least there would appear to be a chance that financing costs are affected. If that is so, we are creating a disincentive to using nuclear power which may not be justified.

Before closing, I would like to add a little something to my prepared remarks, to address the question raised by Senator Metzenbaum.

The suggestion with respect to an exception for gross negligence or willful misconduct is one which we faced back in 1957. It is based on the idea, and he suggested it today, that gross negligence and willful misconduct are discreet notions in the tort system. The trouble is that they are not.

We do not teach gross negligence anymore in our tort course, largely because nobody has any confidence that he can distinguish between simple negligence or gross negligence, and no confidence that the courts, in fact, make that distinction, and juries make that distinction in practice.

The CHAIRMAN. They still use the same rubric that they have used for years, though, gross, willful, wanton.

Mr. MURPHY. Well, there is that hierarchy. I think most people think that willful misconduct means something other than simple negligence. But if you follow cases in which punitive damages have been imposed, punitive damages are supposed to be imposed only in cases of reckless disregard of the consequences.

There are a number of cases in which punitive damages have been imposed on the basis of conduct which, by any objective standard, seems to be borderline negligence.

The history of litigation under the Warsaw Convention, where there was an exception, I can't remember the terms, but I think the exception in Warsaw Convention was for gross negligence, willful misconduct, or something of that sort, suggests that if the only way juries could find to exceed the very low, in those days, limits of liability of the Warsaw Convention, was to find that conduct was grossly negligent or willfully misconduct, they would do so.

So we concluded back in 1957 that the government indemnity should apply, regardless; should not try to have an exception for those concepts. If anything, I think the record since 1957 suggests that we were right.

Now, I did not know from Senator Metzenbaum's suggestion whether he was talking about an exception to the government indemnity or was talking about some system in which the government would pay and then seek to recoup by way of a separate action against the contractor.

I think either of them is based on the same mistaken assumption that you can, in fact, make these things work.

A government attorney who is under pressure to bring a lawsuit to recover some of the indemnity paid, I would think, would be an intolerable situation if he was forced to make the judgment that the conduct was merely negligent.

So I think it is an unwise idea, while I understand the thrust of Senator Metzenbaum's remarks, I do not think it works as a practical matter, and therefore, I would oppose doing it.

In closing, I would like to say that I still find it remarkable that this legislation, which did not seem controversial thirty years ago, and which has worked very well, should be so much a matter of controversy.

In part, the attack on the statute is a not very well disguised attack on nuclear power, but in part it is based on a failure to understand that the risk of nuclear power, at least in the civilian side, a very low probability of a very bad accident is not amenable to our ordinary system of tort law and insurance.

To the extent that pending proposals are based on the theory that this risk should be brought within that system, they are, in my view, misconceived.

Thank you.

[The prepared statement of Mr. Murphy follows:]

Statement of Professor Arthur W. Murphy
Columbia University School of Law
Before the Senate Energy Committee
Hearings on the Price-Anderson Act
March 18, 1987

I first testified before a congressional committee -- the Joint Committee on Atomic Energy -- on this subject almost exactly thirty years ago. At the time I had just finished directing the study of what was called the "atomic insurance problem" for the Legislative Drafting Research Fund of Columbia University on behalf of the Atomic Industrial Forum. The original Price-Anderson Act incorporated many but not all of the recommendations of that study.

Most recently, two years ago, I testified before the Subcommittee on Energy and the Environment of the House Committee on Interior and Insular Affairs. Much of what I have to say generally about Price-Anderson will be a repeat of what I said there.

I would like to start my discussion by noting that the Act has been remarkably successful. It has accomplished one of its primary objectives -- making it possible for participation of private industry using its own funds in the development of nuclear power. As to the second objective -- protection of the public -- the Act has not, thankfully, really been tested, although the experience at Three Mile Island, particularly the quick response of the insurers, is reason for optimism. But it can be said that no member of the public has gone uncompensated

for injuries resulting from nuclear activities covered by the Price-Anderson Act. Moreover, this has been accomplished at very little, if any, cost to the government. There are few statutes in existence for thirty years that have cost the government less and achieved more in terms of furthering avowed government objectives.

It is also worth noting that the protection afforded to the public is real. Assuming an accident causing enough off-site damage to be classified as an extraordinary nuclear occurrence (ENO), a person injured is spared many of the problems of the ordinary tort plaintiff. He or she need only establish that the injury was caused by the nuclear accident; the Act supplies an identifiable, financially responsible defendant -- unless the accident caused damage in excess of $635 million. Even if the accident were to bankrupt the utility operating the facility at which the accident occurred, payment of a judgment would be assured by the required financial protection made up in part of private insurance and in part of retrospective assessments against utilities operating nuclear plants. The retrospective assessment system is, I think, an under-appreciated feature of Price-Anderson. It represents a unique assumption of liability by persons who will have had no connection with an accident. It is different from enterprise liability, where the defendant held liable might, in fact, have caused the damage, although causation cannot be established. Under the retrospective assessment

system, all but one of the utilities paying the damages would have had no connection with the accident.

These obvious advantages to potential plaintiffs of Price-Anderson over standard tort liability have not been lost on those who would amend the statute. Unlike earlier calls for repeal, those who would amend Price-Anderson today want to keep the benefits but get rid of what they see as the major disbenefit -- the limitation on liability. In my view it won't work. The cap on liability is an essential part of the system. If you eliminate that part, you will sacrifice the benefits.

To begin with, the insurance market would in all likelihood be fragmented. No longer would suppliers be able to rely on the insurance of the operator; each supplier would have to buy his own coverage, and the competition for coverage would almost certainly have the effect that the entire amount of coverage offered by the insurance industry would not be available to cover a single accident, as it is now. Moreover, I don't see how the retrospective assessment system can survive. There has to be some quid pro quo for the unique assumption of liability for accidents unconnected with the utilities' operation. It seems inevitable to me that the removal of the limit on liability will in time dismantle the whole scheme and leave nuclear accidents to be regulated by the regular tort system.

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The belief that the tort system will produce a better result for persons injured even in the event of a catastrophic accident is widely held, as is the notion that while special treatment may have been justified for the infant nuclear industry, now that it is mature the usual ground rules should be restored. Indeed, this latter notion is the raison d'etre of our periodic revisits to the subject. The initial Congress put a ten year limit on the statute in the hope that by 1967 "the insurance people would have a sound program of their own." That hope -- and there are echoes of it today -- is attributable in large part to a failure to understand that the kind of risk we are concerned with -- a very small chance of a very bad accident -- is not amenable to our system of tort law and insurance.

This misunderstanding is an important element in the opposition to Price-Anderson. Some of the opposition is, of course, thinly veiled opposition to nuclear power itself. But even many supporters of nuclear power have never understood the need for the Act. In part that misunderstanding is based on a misunderstanding about the insurance market, on a belief clearly contrary to fact that the premium charged for a "vanishingly small" risk will be equally small. In large part it is based on assumptions about how the tort systems works, or will work in the event of a catastrophic accident.

It is hard for me to understand the infatuation with the tort system -- except by lawyers. It is true that the tort

system makes possible the individualization of justice in some cases. But we pay a high price for that seldom realized possibility. Even in a non-catastrophe situation, there are many problems with the system. Considerably less than one-half of what it costs defendants is paid to plaintiffs. The system tends to undercompensate the seriously injured and overcompensate some others. This is not the place to argue the merits of the tort system but I think it is worth pointing out that, judged as a system for providing compensation for physical injuries, most observers regard it as deficient.

In the case of catastrophic accidents it seems clear that the tort system will not work at all well. Indeed it is ironic that proposals for "restoring the customary tort rules" for nuclear accidents are being made at a time when, in other areas, we are looking for alternatives to those rules. A few years ago Chief Judge Jack B. Weinstein of the United States District Court for the Eastern District of New York addressed the American College of Trial Lawyers on the subject "should the law develop better ways of compensating those injured in man-made disasters?" Judge Weinstein, who presided over the Agent Orange litigation, stated that in the case of major disasters there probably needs to be a cap on the total cost, a method of allocating the cost among defendants and a sure source of funds -- and cited the Price-Anderson Act as a possible model. That Judge Weinstein should be making such a talk, of course, reflects new insights into the problem of liability for catastrophic accidents forced

upon us by asbestos, Bhopal, and the disposal of hazardous wastes -- all of which have made apparent the inability of the tort system to cope with massive liabilities.

In terms of the tort system, the tragedy at Bhopal is the closest analogy to a possible catastrophic reactor accident we have seen. Had the accident happened -- with the same severity -- in the United States, Union Carbide almost certainly would have been thrown into bankruptcy and, except for emergency aid, persons injured would be years from getting anything by the way of compensatory damages. Indeed it seems likely that some of the elements of Price-Anderson would have to be retroactively enacted -- or invoked through the bankruptcy courts.

I do not, of course, mean to suggest that the compensation provided by Price-Anderson will necessarily be fair. Obviously, in a "worst possible" case, it would not. But putting a cap on the liability does not mean that recovery must be limited to that amount. When I first testified on the Price-Anderson bill I opposed the limit on liability and advocated an unlimited government indemnity. That proposal (which the Columbia study had made) was rejected by Congress, although Congress did enact a promise to take a look at the situation if damages exceeded the limit on liability. I still feel that in any overall solution some governmental input will be necessary. However, it is clear to me that we should not try to deal with the question of an

appropriate governmental role in responses to catastrophic accidents in the context of nuclear power alone.

What is at issue is a fair allocation of the burden of accidental injury. My own view has always been that the people injured should not be called on to subsidize the rest of us. But that does not mean that we need to swallow whole the tort system's extravagant cost -- a cost which has reached the point where defendants are willing to pay hundreds of millions of dollars to settle claims they feel are without merit rather than litigate. What the details of the allocation should be, is, obviously, a subject on which a great deal of thought is needed. i have little doubt, for example, that punitive damages should be forbidden. If an accident is caused by conduct reckless enough to warrant punitive damages, the punishment should be left to the criminal law. Whether damages for pain and suffering are appropriate is a more difficult question. In other countries, and in our country in workers' compensation cases, one of the tradeoffs for strict liability is an elimination of pain and suffering as an element of damages. And what can we do to deal with long-delayed injuries -- sure to be a large component of damages from a radiation accident? But like the question of an appropriate governmental role, these questions are, I think, best handled in the context of a consideration of all kinds of catastrophic accidents. Given the very small probability of a catastrophic reactor accident, it still makes sense -- as it did

thirty years ago -- to avoid elaborate mechanisms to deal with an accident that may never happen.

If we were writing on a clean slate, my recommendation would be to simply extend Price-Anderson without a termination date. By now it should be realized that we will never have enough experience to make catastrophes amenable to the tort system. Even if we were to experience an accident causing significant off-site damage, the factors affecting the amount of damage off-site are so infinitely variable that it is impossible to predict with any accuracy.

Such a simple extension does not seem in the cards and the question (as I see it) becomes whether the proposed substitutes depart so far from the rationale of the original Act as not to fulfill its purpose. In making that assessment, I think it is important to remember that we are, in reality, talking about a system to deal with one nuclear incident. I have always felt that was probably true and since Chernobyl I have become convinced that a domestic nuclear accident causing extensive off-site damage will shut down our nuclear power program -- for a long time, if not permanently. If that is true, the burden of retrospective premium assessments will be extremely heavy on those companies which have a large number of operating reactors.

As I said two years ago, I have no serious objection to raising the limit on liability to $1 billion or even $ 2 billion

if industry feels it can live with the risk of larger retrospective assessments; there is a surface plausibility to the idea that if $500 million was fair in 1957, it can't be today. The difficulty I have with raising the limit on liability is that the new number has no more basis in fact than the old. $500 million was an arbitrary number in 1957 and maybe is as valid now as it was then.

I cannot, of course, speak for industry. If I were a public utility I don't think I would support the bill which is before you. It doesn't make much sense to accept much larger potential liability on existing reactors for extension of protection to future reactors which are not likely to be built for a long time, if ever.

But, be that as it may, I think that the setting of a limit of liability at $ 6 or $ 7 billion is unwise. We are dealing as we were thirty years ago with the possibility of an accident which may never happen, indeed, probably will never happen. It makes no sense to impose costs now to provide for such an accident. The retroactive assessment system does not appear to be without present costs -- at least there would appear to be a chance that financing costs are affected. If that is so we are creating a disincentive to using nuclear power which may not be justified.

In closing I would like to say that I still find it remarkable that this legislation which did not seem controversial 30 years ago, and which has worked very well, should be so much a matter of controversy. In part, the attack on the statute is a not very well disguised attack on nuclear power but in part it is based on a failure to understand that the risk of nuclear power -- a very low probability of a very bad accident is not amenable to our ordinary system of tort law and insurance. To the extent that pending proposals are based on the theory that this risk should be brought within that system, they are misconceived.

The CHAIRMAN. Thank you very much, Professor Murphy. Your statement is a very good one, very provocative. It may be true that we have misconceived the problem, but we also work within the political system of compromise. We have got a problem here that needs to be solved and I think it is probably better to solve it in an imperfect way than not to solve it at all.

I share the view that present law does cover the operating reactors. But I think there is some question about that, and it is well, I think, to both clear up that question and to increase those limits. Of course, that is what we intend to do. $6.6 billion is a very generous amount, no doubt.

I think you, yourself, pointed out, we think this is a very low probability accident, or low probability of having to pay anything. It is almost like such a small chance, why worry about what you have to pay for such a small chance.

Mr. MURPHY. There is an unreality about the whole thing, if you are dealing with the possibility of an accident which is, I think the term is vanishingly small. The only worry that I have, I think the retrospective assessment system was a good additional provision. It was not one which we originally recommended. Good in the sense that it does not attempt to finance in advance the possibility of liability.

The only thing I am worried about, and I really have no empirical basis for this, is whether or not the imposition of that contingent liability will, in fact, make nuclear power more expensive than it ought to be. If it does, then in a sense, you are distorting choices. I do not know what the choices are, but you are, in a sense, distorting the choices on the basis of a cost which may never turn out to be needed.

The CHAIRMAN. Thank you very much, indeed, Professor Murphy, for an excellent statement.

Next we will have utility representatives, Mr. Steve Griffith, Jr., Senior Vice President and General Counsel of Duke Power; Mr. M. G. Johnson, representing the Price-Anderson Contractors Policy Issue Study; an Mr. Omer Brown, II, representing the Energy Contractors Price-Anderson Group.

Please proceed, Gentlemen. We have your written statements. If you would like to summarize, that would probably be helpful to the Committee.

STATEMENT OF STEVE C. GRIFFITH, JR., SENIOR VICE PRESIDENT AND GENERAL COUNSEL, DUKE POWER CO.

Mr. GRIFFITH. Thank you, Mr. Chairman. It is a pleasure to be before this Committee again on this important subject.

I am Steve Griffith, Senior Vice President and General Counsel of Duke Power Company. I appear on behalf of the American Nuclear Energy Council and the Edison Electric Institute.

During the last session of Congress, this Committee and the Committee on Environment and Public Works thoroughly reviewed Price-Anderson and a large number of proposed amendments. That process led to a substitute for the two versions of S. 1225 that had been reported, Amendment 3238 to S. 1225.

The substitute was intended to be offered, if time permitted, as the last session drew to a close. Described as a reasonable reconciliation of those two revisions, it was arrived at through the hard work of the Senators and staff involved. It would have extended and improved Price-Anderson while maintaining its fundamental structure. Time did not permit floor action last year. Nevertheless, the bill was a sound and reasonable compromise.

Mr. Chairman, we urge prompt action on legislation to extend Price-Anderson that would preserve its fundamental structure, as Amendment 3238 would have done.

However, there are some troubling aspects to that amendment, especially the drastic increase in retrospective premiums to be paid by licensees.

In 1975, the electric utilities with nuclear units agreed to replace the federal government's indemnity with the retrospective insurance provision that requires them to pay for an accident at a facility over which they have no direct control.

This has worked well. It provides the most inexpensive form of protection for the public and got the government out of the reactor indemnity program. In agreeing to this form of mutual insurance, the industry did not agree to sign a blank check. There are limits that must be observed, failing which, the system will begin to break down.

Investors will, no doubt, consider the size of the retrospective premium in deciding what they must have in the way of an effective return on the security of nuclear utilities, and the cost of money will affect the cost of electricity.

We ask that you bear that in mind when you consider the level of deferred premiums for which licensees can be assessed.

I might add, the article in the Wall Street Journal this morning talking about investors' perception of the risk utilities run from the property damage side of the equation, not the public, but just the property damage, is getting more attention on Wall Street, whether investors should require a higher return because of the risk that utilities operating nuclear units are supposed to.

Retaining the fundamental structure of the Price-Anderson system requires preservation of a number of elements. First, mandatory insurance coverage; second, of anyone who is liable; third, for the entire liability exposure, including defense and indemnity for all damages; next, on a channeled, no-recourse basis; sixth, for the life of the facility; seventh, to produce a large pool of funds promptly after an accident; eighth, to be paid out in the case of an extraordinary nuclear occurrence under waivers of defense so that claimants need only establish causation and damages; lastly, subject to limited legal liability but not limited compensation.

Congress has pledged throughout Price-Anderson to review any extraordinary nuclear occurrence, so that everyone injured as a result of an accident would be compensated.

The CHAIRMAN. Mr. Griffith, let me interrupt you at that point. I have read your statement. It is an excellent statement. I would like to deal with these real questions that we have, first of all, as to the amount of liability, $6.6 billion.

Can the industry buy that amount, considering that there is no escalator in it?

Mr. GRIFFITH. We have arrived at a consensus that while that is an awful lot of money, and I really, personally, do not know how a federal judge could handle that amount of money at one time.

The CHAIRMAN. The same way they do in one of these big antitrust cases.

Mr. GRIFFITH. As you say, sometimes it is better to go ahead and solve a problem poorly, and get it solved, and I suppose that is where we are coming out.

We think that if there is a certainty as to the amount and we are not starting at a new bargaining position, so to speak, that this $6 billion or $7 billion, as Congressman Udall calls it, I think he is factoring in a few more units coming on line and therefore increasing the amount, if we are not starting at a floor at which we will go up, we are talking about the limit that Congress is going to set.

We think that with the reactors operating the way they are now in this country much more safely than they were prior to the Three Mile Island accident, because of the Nuclear Regulatory Commission's more careful observance of safety and the industry's own actions that it took in forming the Institute of Nuclear Power Operation, INPO, that we can live with this limit.

The investors will not be concerned so long as we operate these units safely. I believe that we have learned a great deal over the last few years about operating these units, and we can operate these units safely.

The CHAIRMAN. Let me ask you, how about the question of gross, willful negligence on subcontractors?

Mr. GRIFFITH. Any time you get into this business of willful and wanton, gross negligence, whatever, of someone performing some part, in this Price-Anderson thing you tend to start pulling it apart.

The CHAIRMAN. First, can they get insurance for willful, gross negligence?

Mr. GRIFFITH. I do not believe they could.

The CHAIRMAN. Would the big contractors, let us say Westinghouse at the N Reactor, would they be able to do that job without insurance? What would be the likely result of the solution that Senator Metzenbaum offers, that is, not to insure gross and willful negligence?

Mr. GRIFFITH. Well, I cannot speak for them, but if I were the general counsel of Westinghouse and they had no protection, I would certainly recommend that they not continue that business. I believe if I were the chief executive officer, I would certainly get out of it.

The CHAIRMAN. Well, I am advised, and I want somebody to tell me if this is correct, that the likely result would not be that the work would not get done but that it would be done by certainly smaller companies with less to risk and less expertise and, in effect, less safety to the public in the end. Is that correct?

Mr. GRIFFITH. Perhaps so. I just have a difficult time speaking for someone else.

The CHAIRMAN. Mr. Johnson or Mr. Brown, can you address that question?

Mr. JOHNSON. I think, first, it is important to realize when we are talking about contractors in terms of Price-Anderson, we are

not talking about just the Westinghouses and that size contractor. Keep in mind that is a minuscule portion of the individual contractors involved.

I think Secretary Vaughan, if I recall his testimony last year or the year before, sometime in the 99th Congress, on this subject, testified that there are some 78,000 suppliers who, over the years, have been covered by Price-Anderson.

I think, very clearly, that those people, many of whom are producing a product, 95 or 99 percent of the sales of which are for nonnuclear facilities, will have absolutely no incentive to sell those very necessary components; some of them very mundane pieces of equipment, to nuclear facilities.

Why should they, if it represents no significant financial gain to them, sell to the Department of Energy or Department of Energy contractor under circumstances where they could be held liable for tremendous sums of damages with no ability to insure themselves.

The CHAIRMAN. Under product liability.

Mr. JOHNSON. I think that is one of the mistakes we have been making in the discussions of this, everyone has been thinking in terms of simply these major contracts and these major contractors.

I think we have got to address the smaller contractors, or suppliers are equally important.

The CHAIRMAN. All right. I think that is a good point. Now, with respect to the major contractors, what do you say to Senator Metzenbaum's argument that the only way you are going to get them to clean up their safety act is to make them pay a penalty for it, and that is have to pay some of their own money?

As long as they are being indemnified for anything that anybody does wrong, why bother with safety programs?

Mr. JOHNSON. Well, I first would comment that Senator Metzenbaum has introduced nothing which would indicate that the contractors are at fault for the problems. I think Senator Wallop was addressing that aspect of it. But GAO has identified a great many problems out there in the Department of Energy nuclear facilities.

But remember, the DOE, for the most part, with its operating contracts, enters into cost reimbursable contracts. It has as much control over those contractors as it does over its own employees. I have seen no reason to vilify the contractors as being the culprits if there are problems in the operations of the government nuclear energy facilities. It may be in some case the contract.

The CHAIRMAN. Almost all of these are GOCO's, are they not?

Mr. JOHNSON. Certainly, and therefore, those typically are cost reimbursable contracts with a very, very small fee for the contractor, the operating contractor, in many cases it is strictly nominal, and that contract, I think in virtually every case, in every case I have seen, gives the Department of Energy absolute control over everything that contractor does.

The CHAIRMAN. All right. I think that is a good point, but granting that they have control, suppose that the contractor is the one grossly negligent. What would be the result of not having this indemnification, the coverage for him?

Mr. JOHNSON. I do not see how an officer or director of a major company could justify undertaking a contract with that kind of risk. I would think he would be facing shareholder suits even by

entering into the contract, certainly if the corporation incurred a major loss.

It is almost a certainty there would be a class action shareholder suit filed for waste of corporate assets, if you will, for an executive or director of the company to have entered into such an imprudent contract.

Mr. GRIFFITH. If I might, I think the analogy is in the medical malpractice situation. We are reaching a real crisis in this country, and we will solve it once it gets bad enough. But when you get to a place in North Carolina where within a hundred-mile radius you cannot get a doctor to deliver a baby, they just simply won't do that type of work because the malpractice insurance costs so much, because of this thing of punitive damages.

The CHAIRMAN. Let me ask you, gentlemen, what is your view of the coverage under present law of existing reactors? Does Price-Anderson extend the existing reactors for the term of their licenses?

Mr. GRIFFITH. Yes, sir.

The CHAIRMAN. Are you satisfied?

Mr. GRIFFITH. We are satisfied. I think that where you would run into some trouble perhaps is when you are selling some securities and some lawyer that is representing an underwriter would raise that question, and you do have a question involved in it.

The CHAIRMAN. Is it a serious question?

Mr. GRIFFITH. We do not think so.

The CHAIRMAN. Vanishingly small question, as the professor mentioned.

Mr. GRIFFITH. We do not think it is a serious question, but we would prefer to see the law extended.

The CHAIRMAN. Would you give us a memorandum of law on that? Do you have one?

Mr. GRIFFITH. Yes, sir, we can have one.

[The prepared statement of Mr. Griffith and memorandum requested follow:]

TESTIMONY OF STEVE C. GRIFFITH, JR.
SENIOR VICE PRESIDENT AND GENERAL COUNSEL
DUKE POWER COMPANY

ON BEHALF OF
AMERICAN NUCLEAR ENERGY COUNCIL
AND
EDISON ELECTRIC INSTITUTE

ON
AMENDMENTS TO THE PRICE ANDERSON ACT

BEFORE THE
COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

MARCH 18, 1987

My name is Steve C. Griffith, Jr. I am Senior Vice President and General Counsel of Duke Power Company. My statement is on behalf of the American Nuclear Energy Council ("ANEC") and the Edison Electric Institute ("EEI"). ANEC represents more than 100 organizations having an interest in nuclear power, including privately, publicly, and cooperatively-owned utilities, manufacturers, architect-engineers, and various other firms involved in the nuclear electric power industry and its supporting fuel cycle. EEI is the association of investor-owned electric utility companies and its members generate about 75% of the electricity in the United States.

Members of ANEC and EEI have made substantial commitments to the use of nuclear energy in the generation of electricity. My company, Duke Power, operates seven nuclear units.

During the last session of Congress, this committee and the Committee on Environment and Public Works thoroughly reviewed Price Anderson and a large number of proposed amendments. That process led to the development of a proposed substitute for the two versions of S. 1225 that had been reported: Amendment 3238 to S. 1225. The substitute was intended to be offered if time permitted as the last session drew to a close. Described as a reasonable reconciliation of those two versions, it was arrived at

through the hard work of the Senators and staff involved. It would have extended and improved Price Anderson, while maintaining its fundamental structure. Time did not permit floor action last year; nevertheless, the bill was a sound and reasonable compromise.

We urge prompt action on legislation to extend Price Anderson that would preserve its fundamental structure, as Amendment 3238 would have done. However, there were some troubling aspects to that amendment, especially the drastic increase in retrospective premiums to be paid by licensees. In 1975, the electric utilities with nuclear units agreed to replace the Federal Government's indemnity with a retrospective insurance provision that requires them to pay for an accident at a facility over which they had no direct control. This has worked well. It provides the most inexpensive form of protection for the public, and got the government out of the power reactor indemnity program. In agreeing to this form of mutual insurance, the industry did not agree to sign a blank check. There are limits that must be observed, failing which the system will begin to break down. Investors will no doubt consider the size of the retrospective premium in deciding what they must have in the way of an effective return on the securities of nuclear utilities, and the cost of money will affect the cost of electricity. We ask that you bear that in mind when you consider the level of deferred premiums for which licensees can be assessed.

We cannot emphasize too much the importance of retaining the fundamental structure of Price Anderson. Many billions of dollars have been invested in reliance on the Congressional assurance that liability coverage (both defense and indemnity) will be coextensive with liability exposure for the life of the facility. Vendors, architect-engineers, constructors, and other suppliers to the nuclear industry have relied on economic "channeling" of liability to licensees, without recourse against suppliers or third parties. As a result, suppliers have foregone separate liability coverage and have not included nuclear third-party liability in their pricing in reliance on the Congressional assurance that the liability coverage will be provided centrally by the licensee for each reactor to everyone who may be liable for a nuclear incident at that reactor (sometimes referred to as universal or "omnibus" coverage), and that they will not be vulnerable to judgments unless, and to the extent that, insurance (or, where applicable, as in the case of university research reactors, government indemnity) is then available to provide defense and pay claims on their behalf.

Price Anderson achieves a true economic efficiency by avoiding the layering of insurance premiums and/or risk factors in pricing.

It does this by the "channelling" of the financial burden of liability for offsite damages to the licensee operating the nuclear power reactor without recourse by licensees against suppliers or other defendants. The channeling and "no recourse" features of our system are not accomplished directly, as in the international conventions on third-party liability and the laws of other nations, by making the operator of the facility exclusively liable as a matter of law. Rather, they are achieved by the operation of limitation on liability and "omnibus" coverage in conjunction with each other and various technical provisions of the act.

Retaining the fundamental structure of the Price Anderson system requires preservation of these elements:

(a) mandatory insurance coverage

(b) of anyone who may be liable

(c) for the entire liability exposure (defense and indemnity for all damages)

(d) on a channeled, no recourse basis

(e) for the life of the facility

(f) to produce a large pool of funds promptly after an accident

(g) to be paid out in the case of an extraordinary nuclear occurrence under waivers of defenses so that claimants need only establish causation and damages,

(h) subject to limited legal liability but not limited compensation (in view of the congressional commitment to provide full compensation)

Refinements can be made, of course, as I discuss next.

The addition of clarifying and perfecting amendments that would provide borrowing authority to cover shortfalls in funds to pay claims in any one year, and those that would establish procedures for expeditious action on recommendations from the President as to how best to provide full compensation even if all primary and secondary insurance proceeds are exhausted, along the lines that would have been provided by Amendment 3238, would enhance the public benefit features of Price Anderson. Such measures would provide even greater assurance than the present law that Congress means to see that prompt and full compensation is provided, and we endorse them.

The Price Anderson law is enlightened, public benefit legislation. I say that not just because it has made possible private investment in realizing the potential of nuclear energy for the generation of electricity, which it has. Even more importantly, in the event of a nuclear accident, it achieves its paramount objective of assuring prompt compensation of legitimate claims from a large pool of funds without unnecessary procedural obstacles.

In 1978, I argued the case involving the constitutionality of Price Anderson before the Supreme Court of the United States (Duke Power Company v. Carolina Environmental Study Group). The Court's decision in that case unanimously upheld the constitutionality of Price Anderson, and recognized that Congress had put potential claimants in a far better position for the full spectrum of potential accidents than they would be if left to only the funds of the person liable and conventional tort remedies.

The Court concluded that the public receives substantial benefits compared to conventional legal remedies no matter who is liable. Under the present Price Anderson law, claimants would receive prompt and full compensation. Even for a large accident, substantial funds are now available for immediate needs and, the Court emphasized, Congress has pledged to provide such additional compensation as might be warranted. In effect, the Court recognized that while Price Anderson limits liability, it does not limit public compensation. The changes embodied in last year's proposed substitute would increase the amount of funds by a factor of more than ten. Even in today's inflated dollars, this is a whopping sum.

It makes sense to establish mechanisms before the fact to assure a large pool of funds almost immediately, sufficient to deal with most of the accidents that could occur, although the probability of any accident having substantial offsite consequences is very low indeed. Should a larger accident occur, the provisions of the bill for expeditious consideration of Presidential compensation plans will permit assessment of the priorities and adoption, after the event, of mechanisms to marshall and disburse funds as dictated by the peculiar circumstances.

Some nuclear critics have argued that Price Anderson transfers the risk of accidents to those least able to deal with it, individuals with claims for damages. That is not so. The first layer of risk, represented by the first tier of prepaid nuclear liability insurance, $160 million at present, is borne by licensees and their customers to the extent of aggregate net premiums and in the short run (until premiums are adjusted) by the

insurers and their investors to the extent of greater losses -- up to policy limits.

The second layer of risk, $540 million at present, is represented by the retrospective assessment coverage provided by the 108 power reactor licensees and administered by the insurers. The cost is borne by the customers or investors (or both) of nuclear plant licensees.

If there is a third layer of risk, that is, if further funds are appropriated in accordance with the Congressional commitment under present law, it may be borne by whatever class, including licensees covered by Price Anderson, that Congress elects to tax in order to reimburse the Treasury. Instead, if Congress so elects, the necessary funds might be provided from general revenues, as is the case with disaster relief. The latter course is not unreasonable, since the public at large benefits from the low fuel costs characteristic of safe, normal operation of more than one hundred nuclear plants across the nation. In short, there would be unsatisfied claims and risk-shifting to the injured only if one grants the critic's premise that Congress will renege on its promise.

Finally, one hears the argument that Price Anderson was intended to be temporary legislation. The short answer to that is that government insurance (i.e. indemnity) for commercial activities was intended to be temporary, and has, as intended, been phased out under the 1975 amendments.

Prior Congresses intended to and did enact a system to induce private investment and assure public compensation under which liability coverage coextensive with liability exposure would endure for the duration of that exposure. The present law represents a highly-refined system, arrived at after careful deliberation in 1957, and incorporating major amendments enacted in 1966 and 1975.[1]

It is important to understand that Price Anderson involves a balancing of benefits and burdens. This was recognized by the Court in its 1978 decision. Price Anderson is also endorsed by

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1/ The 1966 amendments required the waiver of certain issues and defenses in order to remove unnecessary substantive and procedural hurdles to the speedy satisfation of legitimate claims in the event of a major accident. The 1975 amendments created the deferred premium layer of secondary nuclear liability insurance to permit primary reliance on government indemnity to be phased out.

such organizations as the American Bar Association (which at the 1987 Mid-Winter Meeting called for its renewal by a resolution adopted by the ABA House of Delegates), and the National Association of Regulated Utility Commissioners. Many other diverse groups have called for Congressional action to extend and improve this beneficial legislation. Indeed, if we look at the effects of large accidents around the world and at our own tort system, Price Anderson could well be the model for generating large sums without excessive advance costs and delivering compensation without unnecessary substantive or procedural hurdles.

The Price Anderson system does involve a delicate balance of mutually interdependent elements. Preservation of those elements is essential. Though somewhat complex in concept, the law has proven itself in practice. The licensee coverage worked well in the case of the TMI-2 accident, the only instance in which it has been substantially called upon.

Conclusion

Price-Anderson achieves the goals that Congress has had for it and its basic structure ought to be preserved. This committee should report a bill that would do this, while enhancing the public benefit features of the law.

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March 23, 1987

Honorable J. Bennett Johnston
Committee on Energy and Natural Resources
United States Senate
Senate Dirksen Building
Room 1364
Washington, D. C. 20510

Dear Senator Johnston:

During the hearing on amendments to the Price Anderson Act before your Committee on March 18, 1987, you requested that I submit a memorandum on the effect of non-renewal of licensee coverage upon nuclear facilities that are already licensed. I am pleased to provide the enclosed memorandum, which examines the statute and its legislative history and concludes that existing licensees would continue to be covered despite a failure to extend the August 1, 1987 date in subsection 170.c of the Atomic Energy Act.

We appreciate the opportunity to appear before your committee and to submit this memorandum. Please let me know if you require anything further in connection with your deliberations on this important matter.

Sincerely,

Steve C. Griffith, Jr.

SCG/jf

BISHOP LIBERMAN, COOK, PURCELL & REYNOLDS

M E M O R A N D U M

Re: Senator Johnston's question regarding continued coverage of existing licensees if Price Anderson were not extended

NRC's authority under Price Anderson to indemnify licensees who obtain construction permits after August 1, 1987 will expire on that date unless that authority is extended. Those facilities for which construction permits or operating licenses have already been issued by that date remain covered for the licensed life of the facility, including operating license extensions or renewals, and would not be affected by the failure of amendments to extend the date in Section 170.c of the Atomic Energy Act to be enacted.1/

The language of the statute provides for indemnity of NRC licensees if the license was issued between August 30, 1954 and August 1, 1987. It specifically applies also to "any license" issued subsequent to August 1, 1987 for a facility that received a construction permit between those dates. 2/

The legislative history confirms this. In the report3/ of the Joint Committee on Atomic Energy to accompany the bill in the 85th Congress that was eventually enacted4/ as Price Anderson, the Joint Committee stated:

1/ This is not to say that legislation is not necessary; extending the date in Section 170.d is necessary for DOE contractors. Moreover, extending the date in Section 170.c would help preserve the nuclear power option by making coverage available for future plants.

2/ Section 170.c of the Atomic Energy Act of 1954, as amended, 42 USC §2210 (c).

3/ H. Rept. No. 435, 85th Cong. 1st Sess.

4/ P.L. 85-256

> The provisions of this bill provide government indemnification to those licensees who obtain their licenses within the next 10 years.5/ The indemnification agreement is to run for the life of the license."

Additional light is shed on this subject by the legislative history of a 1964 amendment to Price Anderson (P.L. 88-394). That was the amendment that clarified that, once a construction permit was issued prior to the so-called "expiration" date (then, August 1, 1967), Price Anderson would apply to any subsequently-issued license for that facility. The clarification responded to the concern that, if extension legislation were not enacted, those facilities that received construction permits but not operating licenses by August 1, 1967 might not be covered. The Joint Committee's report indicated that

> "It was . . . the intent of Congress that Price Anderson protection, once afforded, would continue in effect throughout the entire period of the license.6/

That the term "any license" in Section 170.c was chosen instead of the term "an operating license" appears to have been purposeful. "Any license" would include renewals. Price Anderson coverage must have been intended to apply to renewals; otherwise, the intent that coverage endure throughout the licensed life of the facility could not be carried out under the Atomic Energy Commission's licensing practices in those days. At the time of the 1964 amendment, renewals of all operating

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5/ The original ten-year period has of course been extended for two additional ten-year periods.

6/ See also the section-by-section analysis in the 1964 report of the Joint Committee, which emphasizes that the amendment merely carried out the original intent. The AEC's General Counsel had advised that this was the effect of the law even without the amendment. See the last sentence of Section 185 of the Act, 42 USC §2235 (a construction permit is deemed to be a "license" for purposes of other sections)

licenses (called "provisional" licenses) were required every eighteen months. Operating licenses for power reactors were not issued for terms in excess of eighteen months until 1970 (See 34 Fed. Reg. 6540, April 16, 1969; 35 Fed. Reg. 5317 March 31, 1970; and 35 Fed. Reg. 6644, April 25, 1970). It would have made no sense for Congress to go to the trouble to clarify that an operating license would be covered so long as the construction permit was issued by a date certain if that coverage would have applied only to the original license and not to renewals, because the resulting coverage would have lasted at most eighteen months -- i.e., until the first renewal.

Finally, it should be noted that the Congressional intent that coverage endure for the licensed life of the facility has been carried out in the statute and in NRC regulations and practices so that coverage extends through the decommissioning of the facility. Section 170.a of the Act makes it a condition of any license issued under Sections 103 or 104 that Price Anderson coverage be maintained. Section 101 of the Act makes it unlawful to possess (even without using) a utilization facility (which would include any power reactor) except under a Section 103 or 104 license. NRC regulations in 10 CFR §50.82 do not permit surrender or termination of the possession-only license until completion of an approved plan for decontamination of the facility and disposal of radioactive material. Section 170.a mandates that an appropriate level of Price Anderson coverage be maintained until that license is terminated upon completion of the appropriate decommissioning steps. The standard form of indemnity agreement (10 CFR §140.92, Appendix B, Article II) requires that financial protection must be maintained even beyond, among other things, the expiration, termination, suspension or revocation of the license until all the radioactive material has been removed from the location covered by the agreement (and until transportation from that location has been completed) unless the Commission authorizes (subject, of course, to Section 170.a) the termination or modification of financial protection.

In summary, from the text of the Act and the legislative history, it may be seen that even if the August 1, 1987 date in Section 170.c were not extended, requirements to maintain primary financial protection, to participate in secondary financial protection, to waive defenses, as well as the limitation on liability in subsection 170.e, and all the other elements of Price Anderson requirements and coverage would apply to any license (including extensions and renewals) for a facility for which a construction permit (or, of course, both a construction permit and an operating license) had been issued prior to the "expiration" date.

Joseph B. Knotts, Jr.

March 23, 1987

The CHAIRMAN. All right. Mr. Johnson, you may proceed. Do you have a statement to make, or are you just backup on Mr. Griffith?

Mr. JOHNSON. No, no, no. In fact, I filed prefiled testimony, and I want to make it clear at the outset that I am talking not about the 170(c), the licensee, aspects of Price-Anderson, but rather the section 179(d), the government contractor section.

Were you through with yours?

Mr. GRIFFITH. Yes.

STATEMENT OF M.G. JOHNSON ON BEHALF OF THE AMERICAN NUCLEAR ENERGY COUNCIL

Mr. JOHNSON. So, if I may proceed, and I request, if it is not done automatically, that my prefiled statement be admitted into the record.

The CHAIRMAN. Yes. All statements will be put into the record.

Mr. JOHNSON. Now, also, I have read but, as Arthur Murphy said, not studied Senate Bill 748. I only received it last evening. I have read it. It appears to be essentially the same thing with respect to the government contractors as was included in 1225 in the last session, and generally, I think, is highly acceptable to the government contractor constituency.

There are a couple of problems, two or three, I think some of them just a matter of words, a couple perhaps of substance, that I think need to be brought up.

At the outset, I do want to emphasize the importance of enacting this extension as soon as is possible. Today DOE is going out with requests for proposals on a variety of contracts, some large ones coming up this year, some routine small ones.

Now, each of those contracts, with respect to a nuclear facility, will contain only the $500 million indemnity; then only if the contractor or supplier convinces DOE that they should give that indemnity.

Unlike the licensee side, on the government contractor's side, 170 (d), the granting of the indemnity is discretionary with DOE with respect to government contractors. That is one change I think should be made in the bill.

I think it should be made mandatory any time there is a nuclear risk, because otherwise, as has happened on some government projects, nuclear projects, DOE projects, DOE runs into a public relations problem in that their internal rules permit the contracting officer to issue the indemnity only if the nuclear risk is perceived to exceed $60 million.

For public relations purposes, DOE does not want to have to admit that publicly, and as a result, the contractor that cannot get other insurance may be without coverage. Therefore, I really think, in all fairness, that the DOE government contractor indemnity ought to be mandatory rather than discretionary.

I was starting to point out that in the contracts awarded today there will be, at most, the $500 million indemnity. Yet, come sometime in the near future, it is fairly clear that Price-Anderson will be extended, that the limit of liability will be increased substantially at the moment the numbers are six billion, seven billion, something in that range; twelve, fourteen times.

The contractor who signs that contract today, with a $500 million indemnity, then is going to find himself a year from now, when the lawsuits start coming, or ten years from now, when the lawsuits start coming, with a potential uninsured exposure for the difference between that $500 million indemnity and the six or seven billion dollar liability limit.

I do not think that is fair. I really think that the two should remain equal.

The CHAIRMAN. I think that is a fair comment, and we will try to respond to that.

Mr. JOHNSON. Now, for the same reason, I think that the bill should very clearly become automatically applicable to past contracts. For thirty years, since 1957, industry and the DOE have been entering into these contracts with both parties assuming that there is no nuclear exposure.

As a result, many contracts have been executed over the past thirty years where the price does not reflect any consideration of a nuclear liability risk.

I think, therefore, that because a contractor can still today have liability out of a contract that was completed ten years ago, that again retroactively——

The CHAIRMAN. I do not think that was brought up last year. I am inclined to think, on first blush, that is a valid point, as well.

Mr. JOHNSON. Then, any other comments I have relate primarily to Senator Metzenbaum's comments on the idea of civil penalties. Perhaps I could very quickly explain my thinking on that.

In the first place, I do not necessarily disagree with the idea that some civil penalties would be appropriate. I do feel they are not appropriate in this Act. I think, in the first place, the Department of Energy has the authority already to impose those penalties on its contractors. If they do not, they certainly can do it by contractual provisions in future contracts.

But I do not think that we should complicate Price-Anderson by bringing civil penalties into the Price-Anderson area.

The CHAIRMAN. Can you get us a quick memo on that question of the right of DOE, either under existing law and regulations, or under contract, to impose those penalties?

Mr. JOHNSON. Right. Okay. I will do that. I will point out the Nuclear Regulatory Commission does this by regulation, actually, pursuant to the Energy Reorganization Act, what was it, 1974, under 10 CFR 21, where very, very hefty penalties are imposed, not just on the licensees, but on everyone in the process on the power plant side, the licensee side.

The CHAIRMAN. If you could get us, not a dozen page memo, but one of these quick things that senators can understand, so we can have it. It may not be simple enough for senators, but do your best to make it simple so that in our mark up we can respond to that argument, if made.

Mr. JOHNSON. Right. Then I also think that from a practical standpoint we have got to stop and take a look at who these contractors and suppliers are, and to what extent would they be able to respond, even if under Price-Anderson, if severe penalty were imposed on them.

As I indicated before, whereas a handful of large contractors are covered by these indemnities, some seventy or eighty thousand suppliers over the years have been covered, many very small suppliers.

Even if you take a large contractor, one, say, with total assets of $1 billion, in the event of a major catastrophic nuclear incident, how much money is the government actually going to be able to get out of that contractor?

Probably not an awful lot, without spending at least that much and more to recover it. The run-of-the-mill contractors, even fairly large ones, are certainly not going to have the kind of assets to make that worthwhile.

I really feel that DOE should proceed on something similar to what NRC is doing, if they feel that in their contracts today they do not have the proper authority. Actually, they do have that in many contracts where they have award fees, various adjustments of the fee based on performance. I think it can be done administratively much better than it can be done by inclusion in Price-Anderson.

One other point that Senator Metzenbaum raised was why does the Defense Department not have this problem that DOE has. There is, I think, a very simple reason there. In a DOE nuclear activity, the contractor performing that work will find, in his basic insurance program, liability insurance program to which he looks for his protection, an exclusion for any nuclear liability.

Because the Defense Department does not, with its contractors, get involved in the nuclear side of things, those contractors' insurance policies are not going to have any exclusion which is going to be applicable to what they are doing for the Department of Defense.

In other words, the DOD contractors can generally obtain insurance covering their activities. The DOE nuclear contractors, as a practical matter, cannot. I think that was a distinction that should have been made.

I think that summarizes what I had to say.

[The prepared statement of Mr. Johnson and memorandum requested follow:]

Statement of M. G. Johnson

on behalf of the American Nuclear Energy Council

Before the

Committee on Energy and Natural Resources

United States Senate

March 18, 1987

My name is M. G. Johnson, Special Counsel, Bechtel Power Corporation, and I am here today to submit testimony on behalf of the American Nuclear Energy Council with respect to the Government contractor provisions (Section 170(d) and related sections) of the Price-Anderson Act. We very much appreciate the opportunity to express our views on this extremely important legislation which is so critical to the energy research and defense programs of the United States.

As indicated, my testimony relates specifically to the Government contractor aspects of Price-Anderson rather than to the licensee provisions of the Act (Section 170 (c) and related sections) which govern liability and insurance with respect to nuclear power plants, medical and other research facilities as well as all other nuclear activities in the United States conducted by the private sector rather than by or for the U.S. Government.

Over the years, and particularly during the last two years, the Price-Anderson debate has been confused at times because of the failure to appreciate the distinction between the licensee aspects of Price-Anderson and the Government contractor provisions which are predicated upon totally different policy considerations, a distinction which must be recognized if the best interests of our nation are to prevail when Price-Anderson is extended.

Sufficient attention has not been given to the identity of the entities which are affected by the Government contractor provisions of the Act. That group includes not only the major engineers and contractors who design and build the Government nuclear facilities (which are defense-related for the most part) but also the thousands of suppliers who provide components for those facilities, both during the original construction phase and then throughout their operating life. Many of those suppliers are small businesses, not in a position to assume significant financial risks and, for the most part, the items they sell for incorporation into Government nuclear facilities represent only a minuscule portion of their total sales. As a result, if they are not protected completely against the nuclear risk, they will have little incentive to continue selling their products to the

Government nuclear facilities, and without those products the effective operation of those facilities will be dramatically curtailed, to the detriment of our nation's defense and energy research programs. It should also be noted that the protection provided by Price-Anderson for sub-tier suppliers applies to not only contractors but to utilities as well.

The Government contractor provisions of Price-Anderson have remained essentially unchanged since the inception of the Act in 1957, with the exception of the waiver of defense amendments twenty years ago. During that period, up to and including the current date, the aggregate nuclear liability for those contractors has been five hundred million dollars for any one nuclear incident, and there has also existed a comprehensive Government indemnity in the same amount. As a result, neither the Government nor the contractors have included in contract prices any contingency for the nuclear risk. If, however, the limit of liability is increased, as all have agreed is necessary, those contractors may find themselves with an uninsurable nuclear risk as a result of contracts they are now performing or have completed in past years unless the Price-Anderson indemnity covering their work or services is retroactively increased to the new limits of liability. Since both the Government and the contractors have, for the past thirty years, executed those contracts on the understanding that no unprotected nuclear liability risk was involved, it would be a breach of good faith

for the U.S. Government to increase the liability limits without simultaniously increasing the indemnity to an identical amount on a retroactive basis. More importantly, any gap created by failing to extend indemnity retroactively would force the public to resort to tort law remedies to recover damages in excess of indemnity.

It is also highly important to expedite passage of a Price-Anderson extension since the Department of Energy is presently, and on a continuing basis, awarding contracts and under existing law is authorized to grant only a five hundred million dollar indemnity although the contractors executing those contracts will undoubtedly be retroactively exposed to a much greater liability when Price-Anderson is extended. If liability is imposed retroactively, indemnity to cover that liability must also be established.

Under existing law the Price-Anderson indemnity is specifically exempt from the provisions of the anti-deficiency statute. If the anti-deficiency statute were made applicable to the Price-Anderson indemnity, both the public and contractors would be dependent on future appropriations for protection. In effect, the public protection would become illusory since its effectiveness would be dependent upon the actions of some future Congress which could serve to dilute or eliminate the protection

the Act is intended to provide. In good conscience, the Congress should continue the unconditional nature of the indemnity as it exists under present law.

While high-level nuclear waste activities are probably subject to Price-Anderson under existing law, to eliminate any doubts on that subject, the extension of Price-Anderson should specifically provide for application of its terms to high-level nuclear waste activities. Those activities will, for the most part, be conducted by private industry under contract with the Department of Energy.

Finally, given the ongoing nature of DOE defense programs and energy research, we believe it would be advisable to permanently extend the Government's mandate to enter into indemnity agreements with its contractors. This would eliminate much of the turmoil that has been created every ten years and would provide additional assurances to the public that they will be fully compensated.

In summary, it now appears that the Price-Anderson debate has been narrowed to a relatively few issues, most of which should not be excessively controversial. We would hope that this Committee will give serious consideration to the views expressed in this testimony and that the Congress will proceed expeditiously to extend the Price-Anderson Act.

ISSUE: Action Which Could Be Taken by DOE Under Existing Law To Enforce Contractor Accountability

Some members of Congress have proposed that the legislation extending the Price-Anderson Act indemnification authority include provisions intended to increase contractor accountability with respect to nuclear risks and hazards. The proposals range from the imposition of civil penalties against contractors to granting subrogation rights to the U.S. Government against contractors whose gross negligence or willful misconduct contributes to the occurrence of a nuclear incident. (Incidentally, a notable exclusion from the debate on this issue has been the introduction of any evidence of DOE contractor irresponsibility with respect to nuclear safety over the past thirty years.)

In the event that DOE concludes that further motivation must be imposed on DOE nuclear contractors to perform their contracts in a more responsible fashion, DOE has available to it, under existing law, a variety of actions it can take. By definition all of the contractors involved are parties to a DOE prime contract or a purchase order or subcontract under that prime contract. Nothing in the law of which we have knowledge effectively limits the ability of DOE to insert in its contracts appropriate provisions, together with a requirement that those provisions be carried down to lower tier subcontracts and purchase orders, in order to further emphasize the necessity of establishing nuclear safety as an essential ingredient of these contracts and purchase orders.

DOE could, by contract, subject its contractors to penalties for non-compliance with DOE safety rules and regulations. Government contracts have frequently imposed liquidated damages on contractors for failure to complete some or all of the contract services by specified dates. There appears to be no reason that the same principle could not be applied to non-compliance with DOE nuclear safety requirements. Liquidated damages for completion delays are generally enforceable, even if no actual damages result, so long as the amount of those damages reflect a reasonable estimate of the damages the Government could suffer by virtue of the delay and the same principles would appear to be applicable to liquidated damages for nuclear safety violations.

With respect to major DOE nuclear contracts, such as those for the operation and maintenance of large DOE nuclear facilities, even existing contracts may provide substantial safety incentives to the contractors. For example, those contracts which involve an award fee could result in a reduction of the contractor's fee in the event of irresponsible safety practices by the contractor, particularly if the award fee provisions specifically identify compliance with DOE safety requirements as a substantial element in the establishment of the award fee.

For cost reimbursable contracts, the allowable cost provisions could be revised to specifically preclude reimbursement of the costs of any activities not in accordance with DOE safety requirements. If not already inherent in the DOE cost principles, such a provision would represent only a slight extension of the compliance with law provisions commonly found in both Government and commercial contracts.

Unsafe or irresponsible safety practices by contractors could, in extreme cases, provide the basis of suspension or debarment from future DOE contracts, since DOE is only obligated to contract with responsive and responsible bidders and a contractor who has deliberately ignored nuclear safety requirements under a DOE contract is clearly not responsible.

The key to the enforceability of the imposition of sanctions on DOE contractors is the application of the penalties to the fact of the nuclear safety violations rather than to the physical consequences of the violations. Penalizing a contractor for the consequences of the violation would be contrary to the omnibus coverage feature of Price-Anderson which has been the primary reason that American industry has been able to participate in the U.S. nuclear defense effort despite the potentially overwhelming liability, including defense costs, to which the industry is exposed by that participation. Furthermore, the net worth of the great majority of contractors would be inadequate to cover any meaningful portion of Price-Anderson indemnity payments to victims of a significant nuclear incident.

Most of the current debate on this issue has concentrated on the major contractors who operate and maintain DOE nuclear defense facilities and has ignored the fact that those contractors represent only a minuscule portion of the DOE contractors who rely on Price-Anderson as protection against nuclear liability. DOE has testified that approximately 78,000 contractors have been covered by Price-Anderson during the thirty years that Act has been in existence. Many, if not most, of those contractors are smaller business who would have little incentive to continue providing the essential materials and equipment required by DOE's nuclear defense facilities if continuing to serve DOE would expose them to substantial penalties, particularly if their DOE business represents only a small portion of their sales. Clearly, to avoid the loss of those suppliers and contractors from the DOE nuclear business, any penalties would have to bear some reasonable relationship to the profit which the business could expect to realize from the transaction, and would also have to be tailored to the circumstances of the particular contract, since the degree of control retained by the contractor will have a considerable influence on that contractor's willingness to assume the risk of substantial penalties. No statutory scheme can possibly foresee all of the conditions which could affect the equity of a specified penalty

in any particular case, and accordingly each situation should be treated on a case-by-case basis which can be accomplished only if DOE is allowed to enforce its requirements without new statutory mandates.

In summary, DOE clearly has within its power the ability to impose adequate and appropriate penalties on its contractors whose conduct jeopardizes public health and safety and no additional legislation is necessary to permit the exercise of that power.

The CHAIRMAN. Thank you very much, Mr. Johnson. You have been very helpful, indeed.

Mr. Brown.

STATEMENT OF OMER F. BROWN II, ON BEHALF OF ENERGY CONTRACTORS PRICE-ANDERSON GROUP

Mr. BROWN. Mr. Chairman, my name is Omer Brown. I am a partner in the Washington office of Rivkin, Radler, Dunne and Bayh, and I am legal counsel to the Energy Contractors Price-Anderson Group, which is an ad hoc group of entities covered by one or more Price-Anderson Act nuclear hazard indemnity agreement with the Energy Department.

We also appreciate this opportunity to testify before your Committee today, and the fact that you have scheduled this early hearing, the first hearing of the 100th Congress about the extension of the Price-Anderson Act.

We also have a prepared statement which we have submitted.

The CHAIRMAN. Yes. That will be inserted in the record.

Mr. BROWN. First and foremost, we also would like to stress the need for prompt extension of the DOE contractor provisions of the Price-Anderson Act as far as possible in advance of the August 1st expiration.

The CHAIRMAN. We are going to do that as quickly as we can, as quickly as I can get this Committee to move.

Mr. BROWN. We appreciate that, Mr. Chairman. I wanted to point out that there are six major contracts that expire before the end of the year. Four of these expire on September the 30th, and those are the ones for Hanford, Los Alamos, Lawrence Berkeley and Lawrence Livermore.

On December the 31st of this year, the contracts for the Nevada Test Site and the Brookhaven National Laboratory expire. So it's very important that the extension be done as far in advance as possible.

There was some discussion today about the fact that pre-1957 indemnity agreements did not cover willful acts of high corporate officials. Congress changed that in 1957, and it is even more important today that the present system be allowed because in the last thirty years we have seen, as others have mentioned, a dramatic change in the tort system. So it makes it even important that this provision be in today.

We have no major problem with most of the DOE contractor provisions with the October 1986 version of S. 1225, which, as has been mentioned, was reintroduced yesterday as S. 748. There are a few provisions that Mr. Johnson has mentioned that we also agree with.

Let me just take a few moments in conclusion to talk about the matter of subrogation that has been brought up by several people here this morning.

I would like to stress that Price-Anderson is the only substitute for unavailable private nuclear liability insurance which, if it existed, would not permit subrogation. A subrogation provision, or a provision that eliminated coverage for gross negligence or willful or wanton conduct, would undermine the fundamental Price-An-

derson omnibus coverage, economic channeling feature, whereby anyone liable is covered.

It also, as you suggested by your question, would drive out many more qualified contractors and suppliers that now conduct DOE's often sensitive national defense activities.

The CHAIRMAN. How do you know it would drive them out?

Mr. BROWN. Well, I have another example from what Mr. Griffith said. He talked about the fact of medical malpractice. There is another example in the Superfund program where the response action contractors, and these are the contractors who go in and clean up the sites for EPA, have not been able to obtain adequate coverage for those activities.

The Superfund amendments of last year may not have provided coverage that is adequate enough, and as I understand it, there are some larger qualified companies that have made the corporate decision that they will not participate in the Superfund clean-up program because they cannot obtain the necessary liability coverage to do that kind of work.

The CHAIRMAN. Can you get us chapter and verse on that?

Mr. BROWN. We can, Mr. Chairman.

A subrogation provision would also increase costs to the government because contractors and suppliers would have to add some charge to cover this new and uninsurable risk, and there would be extra record keeping requirements.

It also would foster an adversarial relationship among and down the chain of contractors and suppliers, which would possibly delay payments to the public. Individual defendants, of course, would have to protect their own interests by hiring their own attorneys.

We have seen in the Three Mile Island litigation that one law firm has been able to represent all of the defendants and the settlements have thus been expedited.

Criminal laws provide adequate penalties to punish egregious acts.

The CHAIRMAN. How much was paid out in Three Mile Island?

Mr. BROWN. About $48 million so far, Mr. Chairman.

The CHAIRMAN. What was that for, principally?

Mr. BROWN. Basically, it has been for settlements that have been entered into by the insurance pools for lost wages and dislocation costs and, as I understand it, some allegations of physical damage. But these were all in the form of settlements and they were not reduced to judgments.

The CHAIRMAN. You say dislocation costs. What does that mean?

Mr. BROWN. Those are costs of people who had to move away from the site, were evacuated from the site.

Mr. GRIFFITH. You recall, Mr. Chairman, Governor Thornberg advised pregnant women and elderly people to evacuate the area, and the insurance companies came in and set up offices and paid people——

The CHAIRMAN. Hotel costs, more or less?

Mr. GRIFFITH. Yes, sir.

Mr. BROWN. Mr. Chairman, that summarizes my statement. I would be happy to answer any questions that you might have.

[The prepared statement of Mr. Brown and requested information follow:]

Statement of Omer F. Brown, II

on Behalf of

Energy Contractors Price-Anderson Group

Before the

Committee on Energy and Natural Resources

United States Senate

March 18, 1987

Mister Chairman and Members of the Committee:

My name is Omer F. Brown, II. I am a partner in the Washington, D.C. office of Rivkin, Radler, Dunne & Bayh and legal counsel to the Energy Contractors Price-Anderson Group.[1] We appreciate this opportunity to testify before your Committee and the fact that you have scheduled this early and first hearing of the 100th Congress about extension of the Price-Anderson Act.

First and foremost, we would like to stress the need for prompt extension of the DOE contractor provisions of the Price-

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[1]The Energy Contractors Price-Anderson Group is an ad hoc group composed of The Babcock & Wilcox Company; Battelle Memorial Institute; The Boeing Company; and, General Electric Company. Each of these entities now is covered by one or more nuclear hazards indemnity agreements with the U.S. Department of Energy (DOE) under Section 170d of the Price-Anderson Act.

Anderson Act as far as possible in advance of the August 1st expiration of DOE's statutory authority to enter into new nuclear hazards indemnity agreements.

We submit that Price-Anderson coverage for DOE contractors should be extended as it has been twice before. Subsection 170d of the Price-Anderson Act authorizes DOE until August 1, 1987 to enter into indemnity agreements with certain of its contractors for protection of the public in the unlikely event of a nuclear incident. While the Federal Government's own nuclear activities (which usually are carried out by contractors) have had an extraordinary safety record, the possibility of a serious accident resulting in damages to the public unfortunately cannot be eliminated totally. Price-Anderson provides an assured and exemplary system of protection for the public in case that unlikely event ever happens.

Since 1957, the Federal Government has paid only about $270,000 under Price-Anderson for claims involving government contractors. This fact is illustrative of the safety of DOE contractor activities. It also provides overwhelming evidence that the Price-Anderson system is not "broken" and thus should not be "fixed".

Even though more attention historically has been focused on liability coverage for licensed facilities, such as nuclear power plants, Congress also should be concerned with public protection for risks arising out of DOE activities. In fact, with no new power plants now being ordered, the present expiration date is of

more immediate concern with respect to DOE contractor coverage, because it is clear that DOE will be entering into or renewing contracts for various nuclear activities, including those under the Nuclear Waste Policy Act, after August 1, 1987. Four important DOE prime contracts expire on September 30, 1987 (i.e., those for Hanford, Los Alamos, Lawrence Berkeley and Lawrence Livermore). The prime contracts for Brookhaven National Laboratory and the Nevada Test Site expire on December 31, 1987. Even if negotiations on these specific contracts can be completed before August 1st, there are concerns that Congress may make significant prospective or even retroactive changes in the Price-Anderson Act.

We agree with the conclusion expressed in the August 1983 DOE Report to Congress (and reiterated by DOE in hearings before this and other Congressional Committees over the last three years) that the Price-Anderson indemnity system should be continued to ensure furtherance of DOE's statutory missions in research and development, production, defense and other nuclear fields, and protection of the public. Indeed, as DOE indicated, there would be strong reluctance on the part of existing and potential contractors to do nuclear business with the Department if DOE's authority to enter into Price-Anderson indemnity agreements were discontinued. The strong reluctance would apply especially to suppliers whose nuclear activities are only a small percentage of their overall businesses. This would lessen competition and otherwise increase costs to the Government. The

strong reluctance also would extend down tier lines to subcontractors and equipment suppliers, including many small businesses throughout the country, who might be liable for a serious accident but not have the financial resources to cover that liability or the defense costs associated with such litigation.

Indemnification of government contractors for possible nuclear losses has been provided since the days of the Manhattan Engineer District of the War Department in the early 1940's. Subsection 170d by its terms merely supplements other authority DOE has to indemnify its own contractors. Price-Anderson, however, rounds out that authority so as to better assure the protection of the public at large. Contractor coverage prior to the Price-Anderson Act often was inconsistent, subject to individual contract idiosyncracies, inapplicable to subcontractors, and subject to the availability of appropriated funds. Subsection 170d was carefully designed to correct many of these deficiencies and to provide a uniform system of public protection.

The Price-Anderson system specifically was developed to provide assurance that significant sums of money would be available over an extended period of years to make prompt payment to victims in the remote case of an accident. The only fundamental change since the original adoption of Price-Anderson in 1957 (other than the effects of passage through inflationary periods of time) has been the revolutionary change in the American tort system, most of which has occurred over the last ten-year period. This change greatly has increased the unpredictability of the

probable dollar damages resulting from any major accident, whether it be nuclear or non-nuclear in nature. This makes a system such as Price-Anderson only more essential for the period beyond 1987. Today, commercial insurance has become almost unobtainable in areas such as pharmaceuticals, chemicals, municipalities, space activities, directors' and officers' activities, physicians and hospitals, etc. This disappearance of the commercial insurance market both here and abroad can be credited almost completely to the current trend of our tort system and the general level of discomfort on the part of professional underwriters in trying to predict the probable outcome of damage claims administered under the current American tort system.

At the same time, it is critical to remember that the Price-Anderson program does very little to change the existing tort system, except to guarantee the funds being available to satisfy the tort determinations and to make recovery even easier in the event of an "extraordinary nuclear occurrence" through the waivers of defenses incorporated in Price-Anderson in 1966. While commercial liability insurance virtually has disappeared in many areas of exposure where predictability is greater than it is in the nuclear area, it is interesting to note that to date there has been no indication of a significant reduction in private commercial insurance available in the nuclear area, even though the same underwriters are involved in both areas. This can be explained only by the existence of Price-Anderson and its

beneficial aspects in making a virtually unpredictable exposure at least manageable under its current provisions. It is instructive to note the results of claims brought following the Three Mile Island accident and compare them with other cases, such as the Bhopal tragedy in India.

Some suggested last year that indemnifying contractors against nuclear liability somehow acts as a disincentive to safety at DOE facilities. This is simply not the case. DOE contractors have a number of incentives to act safely. Price-Anderson indemnity covers only nuclear liability. Contractors still are exposed to conventional, nonnuclear liability for which they may or may not have insurance coverage and which has a history of much greater damage awards in the past than nuclear claims. Poor contractor performance could lead to debarment from future DOE contracts, and could be damaging to their reputations. The present indemnity is similar to insurance that contractors, if they could, would purchase to protect themselves. There are existing criminal laws to punish egregious behavior.

While we have no problem with most of the DOE contractor provisions of the compromise version of S.1225 (Amendment 3238) that appeared in the Congressional Record of October 6, 1986 (at S15403), there are a relatively few provisions we believe should be changed or clarified:

The October 1986 version of S.1225 did not address the problem of increasing the amount of indemnity coverage for DOE

contracts now in existence or being negotiated. In DOE contracts currently being executed, the indemnity amount is necessarily limited to $500 million, the maximum amount now authorized by law. If, as appears likely, any extension of Price-Anderson will increase substantially DOE contractors' liability, contractors executing contracts before the Price-Anderson extension becomes effective could face a substantial gap between their liability and the amount of their indemnity, unless the indemnity also is increased to an amount commensurate with the new liability limit. Currently, DOE is not agreeing to any provision in newly executed contracts that would obligate the Department to later increase the indemnity to the maximum extent authorized by law in the event a higher indemnity is established as part of the Price-Anderson extension. In the interest of fairness, both to potential victims of a nuclear incident, and contractors and suppliers, it would be highly advisable to provide clearly that any increased indemnity shall be made effective as to existing and completed contracts as well as to contracts executed on or after the effective date of the extension.

With the very large increase in the limitation on liability and indemnity (from the present $500 million to over $6 billion or more for DOE contractors) provided by the October 1986 version of S.1225, we are concerned about potential "cash flow" problems for indemnified contractors and subcontractors in the event of a large accident. Since Price-Anderson provides "indemnity" as opposed to "hold-harmless" coverage, a DOE contractor, subcon-

tractor or supplier might find itself having a large judgment executed upon it long before DOE would be able to pay the indemnity amount. We therefore suggest that the bill be modified to include a provision that the DOE indemnity shall be the exclusive source of payments for public liability claims involving DOE contractor activities. In fact, section 3b(2)(D)(iv) of the October 1986 version of S.1225 contained such a provision with respect to nuclear power plant coverage. We believe a like provision should apply to DOE contractors as well.

The DOE contractors we represent believe it should be mandatory for DOE to provide liability coverage for contractors and suppliers in connection with government nuclear activities that could result in injury or damage. It then could be applied in more situations, such as waste management facilities, in the interest of maximum public protection. We note that S.1225 as worded last October still would require DOE to determine whether a particular activity is "...under the risk of public liability for a substantial [emphasis added] nuclear incident...." We would prefer to see the word "substantial" deleted.

The October 1986 version of S.1225 contains several new provisions concerning coverage for "precautionary evacuations". While in principle we support coverage for precautionary evacuations, we are concerned that some might interpret that bill's provisions as limiting coverage to only certain situations enumerated in the bill, such as in cases where the evacuation was ordered by an authorized officer of a State or a political

subdivision. If there is to be coverage for precautionary evacuations, coverage should apply in all circumstances where there is liability for such under applicable law. This would be more consistent with other Price-Anderson provisions covering "any legal liability". Section 5(c) of H.R.1414 (the Udall-Sharp bill) would appear to eliminate this potential problem by providing that no court may award costs of a precautionary evacuation unless such costs constitute a "public liability" as defined in the Act.

The October 1986 version of S.1225 would extend the entire Price-Anderson Act for twenty years. We believe consideration should be given to making the contractor coverage provision permanent, subject to periodic review by Congress.

In conclusion, after nearly thirty years of Price-Anderson Act indemnification, private industry has assumed, as Congress intended, a larger role in assisting the Federal Government in carrying out its own nuclear activities without any significant damage or injury to the public. Only about $270,000 has been paid by the Federal Government under the Price-Anderson system. In other words, Price-Anderson contractor indemnification is a system that has worked well. It should promptly be extended again.

Thank you again for this opportunity to testify before your Committee.

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Honorable Philip R. Sharp
Chairman, Subcommittee on Energy and Power
House Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515-1402

June 9, 1987

Dear Mr. Chairman:

I appreciate having the opportunity to be involved in discussions with you last Tuesday afternoon on several matters including the Price-Anderson Act. I was particularly interested in your comments during the mark-up of that bill in your subcommittee last Wednesday relating to the issue of "financial accountability" of contractors and the relationship of that accountability to the safety of operations performed for the Department of Energy.

I feel it is important to express these views to you so that there will be no question that the decisions to be made by your Committee will be made with the full understanding of our views. While much of what I will say may seem somewhat fundamental, it appears that these fundamental relationships are not fully appreciated by some considering this important matter.

As I indicated during our conversation on Tuesday, I think it is important to separate the issue of insurance from the issue of safety. While there is an obvious link between these two issues, the distinctions are important. The safety of any operation is a function not only of the design and condition of the facilities but also of the technical competence and attitude of the people employed together with the procedures governing their activity. First and foremost is the safety of the individuals who are actually doing the work. Those workers, their supervisors and, indeed, the corporate executives responsible for their activity, all consider the safe conduct of the operation to be paramount. However, it is recognized that things can and sometimes do go awry. It is this recognition that prompts the lawyers and the insurance-risk managers to provide for such contingencies.

The factors governing the insurance issue involve not safety but financial risk. The assessment begins with the assumption that an accident can occur and the insurance manager's function is to seek to provide a means to protect the financial assets of the corporation in that event. Generally, that is accomplished through the purchase of appropriate insurance. It is generally true that the insurance policies carried by companies such as ours protect against liability regardless of the legal theory upon which that liability is based. In other words, if we are found to have been

responsible for causing injury to property or person, the insurance policy will provide compensation to the injured party whether we have been determined to have been negligent, grossly negligent, or even having caused the injury as a result of the willful misconduct of one of our employees provided that the intentional act was not committed at the direction of the corporation. All of those liability insurance policies include a nuclear exclusion, i.e., their provisions do not apply in the event of liability resulting from a nuclear incident.

The Price-Anderson indemnification regime was established because private insurance was not available to protect for nuclear activities that were deemed desirable in the national interest. That is still the case today as much as it was when Price-Anderson was originally enacted in 1957. The nuclear insurance pools recently reiterated their position in a letter to Senator Johnston, Chairman of the Senate Energy Committee, in which they indicated that they would not write insurance to cover the activities of DOE contractors engaged in activities for the Department of Energy. Moreover, they also indicated that insurance is not available for limited exposure such as liability for gross negligence or willful misconduct. It is this lack of available insurance that provides the necessity for continuation of the Price-Anderson indemnification program.

From a business perspective, corporate executives must decide where to most effectively employ the resources of the corporation, including its manpower, in order to return to the shareholders a reasonable profit. As part of this evaluation, these executives must evaluate the risks associated with each of the ventures that they undertake. We in Stone & Webster were recently confronted with this situation in another context following passage of the Superfund Amendments Act of 1986. You will recall that that legislation provides indemnity to clean-up contractors for liability resulting from their negligence. No such indemnity is provided for gross negligence or willful misconduct.

Upon evaluation of the circumstances, our corporation has concluded that there exists an exposure to unlimited liability for substantial damages. Consider for instance, contamination of the water supply of a major city. The probability of that exposure is unpredictable and the risk is uninsurable. Therefore, we have concluded that it is not a reasonable business risk to place all of the corporate assets at risk for whatever gain might be earned on such a contract and we have decided that we shall not bid on clean-up contracts funded under the Superfund Act.

Our situation with regard to nuclear contracts with the Department of Energy is very similar. The potential for very large damages exists, the probability of an event resulting in such damages is unpredictable because of a dearth of actuarial data, ironically due to the lack of nuclear accidents, and without Price-Anderson, such risks would be uninsurable. Passage of the Wyden Amendment to H.R. 1414 as suggested on Wednesday would create a serious problem of uninsurable risk even with Price-Anderson. In that event, I am sure that we would have to reconsider the decision to undertake contract activity with the Department of Energy involving nuclear materials.

This analysis by no means suggests that any contractor wishes to be exonerated for his grossly negligent acts or his acts of willful misconduct. We do not and we do not intend to function in the performance of any contract

in such a manner. However, we are acutely aware that the determination that our activities have constituted such behavior will be made, ex post facto, most likely by a jury in a situation involving litigation to recover for damages to property or injury to people. Contemporary standards for jury determinations, including instructions by the courts, do not provide the basis for much confidence. The law books are literally full of cases trying to draw the distinction between negligence and gross negligence, for instance. The only thing that can be said with certainty is that one cannot predict with any certainty what behavior will be deemed to be in one or the other category for purposes of legal determinations. Placing the corporate assets at risk dependent upon the vagueries of the current tort law system is probably not justifiable.

Sometimes, it is helpful to consider analogies. In the context of Price-Anderson, the logic applied of imposing increased financial responsibility to achieve a correlative increase in safety of operation would lead one to conclude that by reducing or eliminating medical malpractice insurance, one could induce greater care on behalf of surgeons, for instance. Personally, I prefer to believe that surgeons exercise their utmost care at all times. However, we all know that accidents do, in fact, occur. As a result, it has been observed that unlimited liability for medical malpractice has caused surgeons in some parts of the country to refuse to render medical services. In an appropriate response, some states have taken legislative action to limit liability from medical malpractice in order to ensure the availability of such medical services.

The point is that manipulating insurance is, at best, an inefficient way of influencing safety. Moreover, if the insurance situation is changed so as to create an unacceptable business risk, the effect may be not to increase safety of performance of operations but, rather, to deter participants from engaging in the activity at all. We share with you the desire that DOE contractor activity be performed to the highest standards of professional care. We share also your desire that these activities be carried out with maximum attention to safety of the operation. We ask for no license to engage in socially abhorent behavior with regard to the carrying out of our contractual obligations. But we must respect the legitimate interests of our shareholders and we must protect the ability of the corporation to provide gainful employment to over 9000 people. When we compared those obligations with the risks that would be imposed by the Wyden Amendment, it is difficult to see how we could continue to perform DOE contracts involving nuclear hazards.

I hope that my comments will be of some assistance. I shall be pleased to discuss any aspect of this issue further should you so desire.

Sincerely yours,

Gerald G. Fain
Vice President and Manager
Washington Operations

cc: Honorable Carlos Moorhead
Sue Sheridan, Esq.
Jessica Laverty, Esq.

The CHAIRMAN. What would be the impact on the program if we had strict liability for all nuclear incidents, not just extraordinary nuclear occurrences?

We had a nine-to-nine vote on this in the Committee last year. What would be the impact of that?

Mr. BROWN. I think that the concern there is, I think what you are talking about is eliminating the, or putting in the waivers of defenses for all nuclear incidents. A decision was made when the so-called extraordinary nuclear occurrence provision was added to the Act in 1966, that to go down to the level of every incident would just encourage nuisance suits. I think that rationale is valid today.

There is a provision where NRC or DOE can determine what is an appropriate level, and I think that should be done administratively.

Mr. JOHNSON. May I, Mr. Chairman, also add something on that. Again, we tend to look at Price-Anderson as something applicable only to catastrophic, major losses.

As a practical matter, in terms of what goes on in the real world day to day, the biggest application of the Price-Anderson concepts, and program, in fact, is in essentially the workers' compensation situation, where a worker at a nuclear facility is injured, recovers workers' comp from his employer but then proceeds to sue another party, either the utility, if it is a contractor's employee, or another contractor, to recover his damages, again in addition to his workers' comp.

If the waiver of defenses was applied to all Price-Anderson type actions, this means that the defendant in that case would not be allowed to show that that plaintiff had deliberately put himself in the position to be injured, or that he was himself guilty of gross negligence.

In fact, the plaintiff, the employee, the claimant in that case, really would only have to show that there was some causal connection between his injury and the nuclear facility, would not have to demonstrate any negligence or fault on the part of the owner.

I think in that area it would be a total disaster to apply the waiver of defenses to the non-extraordinary nuclear occurrence situation.

The CHAIRMAN. Give me a hypothetical situation.

Mr. JOHNSON. All right. At a nuclear power plant, in a play of a contractor who is in for, oh, retrofitting maintenance work, this type of thing, is required to do his work, to go into an area of the plant that is radioactive. Everybody knows it is. It is not a nuclear incident. It is just part of the operation of the plant.

He goes in there, he is attired in special clothing, he is wearing a dosimeter to tell him how much his exposure is, so that theoretically his exposure will remain below the NRC established levels.

Then, for some reason or another, after that he contracts cancer. So he comes back in and, again, he perhaps can recover from his employer, the contractor, under workers' comp, but he turns around and files suit against the utility who supplied the dosimeter, let us say, and says, "You supplied a faulty dosimeter, you must have, because I have got this injury and the dosimeter did not reflect enough exposure to cause that injury."

You can visualize a whole line of arguments that that employee can make, and that is the kind of thing that the utility is looking to the Price-Anderson scheme, in that initial case. Of course, the first layer of coverage on the licensee side being the——

The CHAIRMAN. Let me see if I understand. Let me get a simpler case. A maintenance worker goes in and has spread soapy water on the front steps of the nuclear plant cleaning up while he is drunk. He comes in one day and he slips down, sues for workmen's compensation, collects; then are you saying he could sue the nuclear facility and they not have the defense of contributory negligence? It is connected with the nuclear facility, I guess, is it not?

Mr. BROWN. Well, no, because only if it is the radioactive risk, really, would Price-Anderson come into the picture at all. In other words, unless there is some injury allegedly due to the——

The CHAIRMAN. Only radioactive risk?

Mr. BROWN. Yes.

The CHAIRMAN. All right. So he is drunk and jumps in the radioactive pool or something.

Mr. BROWN. Well, that is right, but the thing is he does not have to do anything that extreme. There are many places in a nuclear plant where an individual can be exposed to radiation, not because of any accident or because of any negligence on anybody's part. It is just that in order to operate a nuclear plant, you have got to have a lot of radioactivity.

These are well marked and people are not allowed to go into those areas, except with protective clothing and the dosimeters and this kind of thing. But nevertheless, somebody, a workman, can occasionally get into something like that through his own foolishness.

If you make the waiver of defenses applicable to all nuclear incidents, then that employee is going to be in a position to collect a lot of money from the utility or from American nuclear insurers, the commercial nuclear insurers.

The CHAIRMAN. Tell me what the meaning of extraordinary nuclear occurrence is. Has it been defined well in the law?

Mr. BROWN. In the regulations.

Mr. GRIFFITH. No, it is not in the law. It is up to the Nuclear Regulatory Commission to declare that.

The CHAIRMAN. What have they declared? What has the Nuclear Regulatory Commission declared?

Mr. GRIFFITH. They have not declared any extraordinary nuclear incident.

The CHAIRMAN. They have not defined it?

Mr. GRIFFITH. Not in this country.

The CHAIRMAN. They have not defined it?

Mr. JOHNSON. They have defined it.

Mr. GRIFFITH. Excuse me. I am sorry.

The CHAIRMAN. How have they defined it?

Mr. BROWN. Mr. Chairman, there are elaborate provisions in, I believe, 10 CFR Part 140 that defines certain exposure levels or certain numbers of injured persons within a certain period of time. I do not remember the figures. It is very sophisticated type information.

The CHAIRMAN. They defined it in terms of, in effect, the quantity of injury as opposed to a description of the mechanism or the event by which that is caused?

Mr. BROWN. That is correct.

Mr. JOHNSON. Price-Anderson Act requires that kind of treatment, that the definition be in terms of the injury, if you will, or the amount of off-site radiation, rather than the level of negligence of the act itself.

Mr. BROWN. There are separate provisions, separate, but the same provisions, promulgated by the Energy Department for the contractor activities.

The CHAIRMAN. Counsel is saying it is defined in terms of the size of the incident as opposed to the injury. I am reading now, of course, from the Act. The term extraordinary nuclear occurrence means any event causing a discharge or dispersal of source, special nuclear or by-product material from its intended place of confinement in amounts off-site, or causing radiation levels off-site which the Commission determines to be substantial, and which the Commission determines has resulted or will probably result in substantial damages to persons off-site or property off-site. Any determination by the Commission that such an event has or has not occurred shall be final and conclusive. No other official or any court shall have power or jurisdiction to inquire into such determination. They shall set up criteria, et cetera.

Mr. JOHNSON. Now, both NRC and DOE have, by regulation, further defined that in terms of essentially the quantum of damage that resulted. After Three Mile Island II, the NRC came back and concluded that their definition was inadequate and they have been working to revise it.

I am not sure. Have they completed that revision?

Mr. BROWN. I think there is a proposed rulemaking out and it is proposing new criteria, but it has not been changed.

Mr. GRIFFITH. It is at a proposed level.

Mr. BROWN. Mr. Chairman, I now have some of the criteria here. As I indicated, they are contained, for NRC licensees, in 10 CFR Part 140, and for DOE contractors in 10 CFR Part 840. There are two criteria that must be met; one that addresses the substantiality of any discharge of nuclear materials from the site, and then another are the injuries that might occur, or the amount of damage in terms of a monetary figure.

It is an elaborate set of criteria, and the NRC, following the Three Mile Island accident, found that although that accident was extraordinary in ordinary parlance, was not an extraordinary nuclear occurrence within the meaning of the then existing criteria.

So there are predetermined and very elaborate criteria, scientific criteria on which they make the determination.

The CHAIRMAN. I understand. Do you have anything further, Mr. Brown?

Mr. BROWN. No, Mr. Chairman.

The CHAIRMAN. Gentlemen, thank you very much. You have been very helpful to the Committee, and I will look forward to getting your legal memos.

Our final witnesses are Ms. Keiki Kehoe with the Environmental Policy Institute of Washington, D.C., accompanied by Ms. Kathleen Welch from U.S. PIRG.

You are Ms. Kehoe on the right?

STATEMENT OF KEIKI KEHOE, ENVIRONMENTAL POLICY INSTITUTE, ACCOMPANIED BY KATHLEEN WELCH, U.S. PUBLIC INTEREST RESEARCH GROUP

Ms. KEHOE. I am, Senator. I am Keiki Kehoe, for the record, with the Environmental Policy Institute. With me today is Kathleen Welch from the U.S. Public Interest Research Group.

We are appearing here today on behalf of nine national environmental and consumer organizations. We want to thank you for the opportunity to present our views on this. I would love to comment on your bill, but I did just receive it this morning, and so I have not had a chance to even read it, much less study it.

Since your bill does cover only the DOE contractor activities, I wanted to focus my comments today specifically on our concerns regarding the contractors.

I am disappointed that the states and the Indian tribes that are affected by the high-level nuclear waste program could not be here today. I think that they have views, which they have stated strongly in the past, and I hope that their concerns are some that you will be interested in taking into consideration, because they have a great deal at stake in the Price-Anderson program.

Essentially, last year we supported the Metzenbaum proposal, S. 2072, as it covered DOE contractors, and we continue to support the principles of that bill. This year we hope that Senator Metzenbaum will be interested in putting that bill back in this year so that the Committee can discuss that.

We believe that there are two things necessary when we talk about DOE coverage or Price-Anderson coverage for DOE. The first is that there be an assurance that there is full and complete compensation for accident victims. The second is that there be a level of accountability for DOE contractors.

I am pleased to see the debate this morning, or discussion this morning has really focused on that, and that is something that we wanted to talk about as well.

As we have heard this morning, the DOE contractors covered by Price-Anderson are exempted from any liability whatsoever, even in those instances where there may have been gross negligence or willful misconduct.

We think that that has a direct relationship to the safety of DOE's operations and we are concerned about that.

The CHAIRMAN. Let me focus in on that, because the answer we have received here this morning is, first of all, you have got 78,000 suppliers who supply principally elsewhere than to the nuclear industry, who have a very small profit margin, and whether they sell another widget to some reactor somewhere, should they be required to, in effect, cover the total negligence, even gross negligence?

Ms. KEHOE. Essentially, we do not believe that any company, no matter how large or how small, should be exempted from financial

responsibility if they cause damages to others through their gross negligence or willful misconduct.

On the question of the contractors, and I know that there was a lot of discussion today about whether these contractors would be interested or willing to stay in business in this field if they were exposed. One of the things that we did in preparing for this hearing, and I regret that we didn't celebrate St. Patrick's Day instead of preparing for this hearing, we will do that later—one of the things that we did was we looked at some of the other federal indemnity agreements and provisions, and particularly looked at the record from a hearing that Senator Grassley held last session on federal indemnification for contractors and found some pretty interesting things in there.

The CHAIRMAN. Let us focus in before we leave this question.

Ms. KEHOE. Sure.

The CHAIRMAN. Do you dispute that the 78,000 suppliers, or a substantial portion of those, would not do business, would not sell widgets to contractors of the government?

Ms. KEHOE. I am not convinced that they would not sell widgets to the government.

The CHAIRMAN. Are you convinced that they would?

Ms. KEHOE. I am not convinced—I think that that is something that if I were a contractor selling widgets to the government, and I had this protection, I would say, "Do not take it away or I will go out of business."

I think that whether or not they would actually cease to do business with the government is something that we would have to see. I can understand why they are saying that.

The CHAIRMAN. It matters, does it not, whether they would not do business with the government?

Ms. KEHOE. Well, I think it does matter, and I think that we have certain activities that the government is involved in that they have to stay involved in. There is no question that we need to have contractors in there doing this.

I think that the government should be asking some pretty serious questions of these contractors. If a corporate executive came to you and said, "I want to take this contract and I promise to fulfill my responsibilities under this contract, but if I intentionally violate the rules that you are prescribing, or if I intentionally cause some huge disaster, I do not want to have to pay for it."

The CHAIRMAN. Well, no, what they are talking about, there are various aspects to it. One is a supplier of equipment. Somebody supplies a light bulb that was willfully negligently manufactured, which goes out in the reactor chamber and somebody therefore trips over the lever.

Are you a lawyer?

Ms. KEHOE. No, I am not.

The CHAIRMAN. There is a case of Palsgraff versus Long Island Railroad, and this long series of unlikely events caused initially by some willful negligence way back at the light bulb manufacturing plant. You say, "Well, that is not going to happen."

Well, it probably is not, but there may be enough of a chance of it, so they say, "Look, we do not make but 19 cents on this light

bulb, for God's sake, do not sell it over there to the N Reactor because they may blow up the world."

So they quit selling light bulbs and they quit selling widgets or 78,000 different species and varieties, so the N Reactor shuts down and some people say, "Well, that will be good because it is too dangerous anyway." And then they start shutting down nuclear power plants all over the country.

Is that bad or good, or would that happen, or do we care?

Ms. KEHOE. I think we care, and I do not think it would happen.

The CHAIRMAN. All right. Why not?

Ms. KEHOE. I think that my understanding of the other federal laws, to take that analogy and put it in something different, if you are the guy that manufactures the bolt that holds together the wing on one of the Air Force's planes, and your bolt was negligently manufactured and it disintegrates and causes this entire plane to go down in the middle of New York City, theoretically, that bolt maker is liable.

So I do not see people saying that they are not going to supply bolts for the airplanes. I do not think that——

The CHAIRMAN. They can insure against that, though.

Ms. KEHOE. Well, yes, and then there is a question of whether anybody has insurance to cover wiping out the World Trade Center, or whatever. The hypotheticals can go to some extremes.

The CHAIRMAN. Really, you do not know whether that is correct or not, that they would or would not sell. They made the boldface statement here today that there would be a serious problem with respect to 78,000 suppliers. You are not prepared to say yea or nay, whether that's true or not.

Ms. KEHOE. I do not think that I have come here with the expertise to be able to judge whether or not they can in fact continue. My opinion is that they would continue. My opinion is that they are making these statements very strongly for some very obvious self-interests, and if I were in their chair I would be making them, too.

So I do not think that there is a question there. I think that it is important for Congress to question whether that is a sound public policy.

The CHAIRMAN. All right. Secondly, what about the question of the large contractors who are at a GOCO, they are really controlled by the government, the government sets the standards, owns the facility, really runs it, the way they do these, they will have a government manager and they will have a lot of employees under them. What do you say to their statement to the effect that they simply could not do business there, the bigger companies, and you would be likely to get a smaller, or to use the phrase, fly-by-night operation that would be willing to take the risk of the catastrophic event. If the catastrophic event does not occur, they make a very nice profit. If it does occur, they are out of business anyway. What do you say to that argument?

Ms. KEHOE. I have heard the argument many times before, and on the other federal indemnity provisions the fly-by-night companies are not the ones we are talking about.

Rockwell testified at a hearing on the Grassley bill saying that we think that a bill that exempts us for gross negligence is fair and fine for DOD activities and other federal activities.

I think that you will find, if you look at the defense contracts, that even with exemptions for gross negligence you still attract some very high-powered, not fly-by-night companies.

The CHAIRMAN. Are you talking about in nuclear matters?

Ms. KEHOE. Well, the DOD's, to my understanding, are for ultra hazardous and nuclear, and someone may want to correct if I'm wrong that DOD doesn't cover nuclear.

The CHAIRMAN. I do not think Rockwell does nuclear contracting, do they?

Ms. WELCH. Yes, sir.

The CHAIRMAN. Yes, they do at Hanford, yes. They testified they wanted to be exempted, or they thought it was fair?

Ms. KEHOE. Well, if I can go back to a point I was going to get to, and I think that there are some interesting comments that were made in these Grassley hearings, and that was that—just to explain briefly, the bill that Senator Grassley had put on the table essentially said the federal government will indemnify a broader range of contractors than are currently indemnified.

Exempted from his bill was any coverage for gross negligence, willful misconduct, bad faith. And in testifying, first off, the Department of Defense and the Department of Justice both came in and testified, opposing the bill on the grounds that they felt that that would undercut the safety of the contractors' performances.

They said that even with that exemption, they were concerned that any kind of indemnification for contractors would, in fact, deter some of the safety incentives. That was their concern.

Now, in response to that concern, a representative from TRW, who sat on a panel with Rockwell, came in and said that, quoting—pointing directly to the willful misconduct exemption, he said, "This caveat should diffuse any fear that indemnification might encourage our contractors to disregard safety."

So I think that there was something where, basically, the people who came there to endorse that bill, which included the TRW representative on behalf of a contractors alliance of, I believe it was 12,000 contracting companies, came there and said that this mechanism will, in fact, remove this disincentive to safety.

The CHAIRMAN. I really don't know anything about this Grassley bill. What is the exposure under the Grassley bill?

Ms. KEHOE. I believe it was that they would indemnify them for their liabilities and there was no absolute cap on the indemnification; subject to appropriations soon.

Should I continue on?

The CHAIRMAN. Yes.

Ms. KEHOE. That is one of our concerns, is this exemption. I think that what Senator Metzenbaum spoke about this morning in terms of DOE's track record on safety at its nuclear facilities is something else we are concerned about. The GAO has a list of studies they have done as long as my arm about some problems that they have been finding at DOE facilities, and we think that GAO's reports raise some serious doubts about whether or not DOE is able

to assure complete safety at their operations solely through self-regulation.

The next point I want to make quickly is that, as we discussed here today earlier, the nuclear contractors operating for the Department of Energy do not purchase any commercial insurance, and it has been discussed at length, the economic reasons why they do not, and we recognize those.

At the same time, other people have testified, at the Grassley hearing and other places, that there is a direct link between purchasing private insurance and safety, and in fact, that insurance does perform a useful mechanism in the marketplace.

The CHAIRMAN. Do you think they would be able to get private insurance?

Ms. KEHOE. No. I am saying that insurance is a mechanism which does, in fact, regulate some hazardous industries. The absence of insurance for this particular sector of activities warrants a system whereby you compensate for that missing incentive, so the statement that I make in my testimony is that the absence of this insurance requirement may further weaken incentives, and because these companies are not required to purchase insurance, it is even more important to compensate somehow for the role that insurance would have played had it been there through other mechanisms.

The CHAIRMAN. Let me interrupt you there to ask, I see on Page 4 of your statement that you say the Department of Energy does not have the authority to impose fines or penalties on its contractors.

We are going to get a memo from Mr. Johnson on that. He says they do have that authority.

Ms. KEHOE. The statement I made was a direct quote from a response that Mr. Vaughan provided for the Environment and Public Works Committee hearing in November of 1985.

The CHAIRMAN. Would you get that for us?

Ms. KEHOE. Certainly.[1]

The CHAIRMAN. Good. That would be helpful.

Ms. WELCH. We have cited that in our testimony.

The CHAIRMAN. Let me ask you another question here, and I am sorry to interrupt.

Ms. KEHOE. That is fine.

The CHAIRMAN. Professor Murphy said that the terms willful, gross, wanton negligence have lost their meaning, that they amorphous concepts, they do not even teach it in law school anymore because it has essentially lost its meaning, it is whatever a jury or a judge says it is. Do you agree with that statement?

Ms. KEHOE. As I said earlier, I am not a lawyer, but I have to say that may be true. On the other hand, if that is the case, then why do people like Mr. Grassley, or why do people like the Department of Defense still use those phrases in indemnification agreements? It is something where maybe they have lost their meaning, but at the same time they continue to be used in other areas. I am not sure just because it has gotten fuzzy, it is a good reason to throw it out.

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[1] This information is contained in S. Hrg. 99-616, at page 494.

The CHAIRMAN. Please proceed.

Ms. KEHOE. Oh, proceed. I have no idea where I was.

The CHAIRMAN. I apologize.

Ms. KEHOE. Okay. I think I was at the next to the last point in this testimony, of just that other contractors are not covered by similar exemptions, and some of that has been discussed this morning, as well.

Essentially, we think that there are some really important policy implications here, and we are glad that you are having this hearing so that we can talk a little bit about them.

We do not think the contractors should be exempted for gross negligence, willful misconduct. In fact, I would prefer a standard that said, if you are simply negligent, you are not exempted, because I do not think there is a lot of room in these activities for people to be even a little bit careless, but we will go along with something tougher because we realize that it is important to draw some line in the sand there.

We think that it is not too much to ask of our nation's nuclear contractors that they agree to go along with the standard that holds them accountable for gross negligence.

I think that in the broader picture, what we are looking at right now, obviously there's a strong push to renew Price-Anderson and get it done by the August 1st recess, and I have few doubts that it will be completed by the August 1st recess.

I think that one of the biggest implications of what happens on Price-Anderson renewal relates to the high-level nuclear waste program, and essentially how that program is going to proceed, what kind of signals are being sent to the affected states and to the public.

I think there are two things that needs to happen in order for the high-level waste program to be successful; a lot of things, probably. The two I am going to identify are, first, that there has to be——

The CHAIRMAN. Where do you think we ought to put it, by the way?

Ms. KEHOE. Louisiana?

The CHAIRMAN. We could use the jobs, I can tell you that.

Ms. KEHOE. I think the two things are essentially that we need to have the utmost public confidence in this program, that there needs to be a public confidence. I think that we have all seen that DOE has not done the best job so far on giving the public a lot of confidence about how they are proceeding. I think that huge steps have to be made in that direction.

The second thing is that we cannot afford to have any kind of accidents, especially not careless, reckless mistakes, that that in itself could jeopardize, or certainly would jeopardize the entire program, and that if you have a Price-Anderson policy whereby the federal government is going into a state and saying, "We are going to bring this stuff in, it is perfectly safe, but if anything happens, we cannot assure that you will be compensated."

I do not think that is a policy that is going to warm the states very much to that program. Furthermore, I think that the public and the states are going to have some grave concerns about a program where we are saying, "We are shipping this stuff through

your town, we are saying it is not hazardous, but if the shippers intentionally drive off the road and cause a multi-billion-dollar accident, they do not have any responsibility for that."

I think that the waste program is something where Congress is going to need to bend over backwards and dot every I and cross every T, and that in Price-Anderson it is an important time for Congress to say that this program has to have a complete assurance of compensation and full accountability, and urge you to carefully consider these things, and that concludes my statement.

[The prepared statement of Ms. Kehoe and Ms. Welch follows:]

PRICE-ANDERSON CAMPAIGN

•Victim Compensation
•Corporate Responsibility
•Taxpayer Protection

Testimony of Keiki Kehoe
Environmental Policy Institute

and

Kathleen Welch
U.S. Public Interest Research Group

on behalf of

Environmental Action
Environmental Policy Institute
Friends of the Earth
Natural Resources Defense Council
Nuclear Information and Resource Service
Public Citizen
Sierra Club
Union of Concerned Scientists
U.S. Public Interest Research Group

before the

Senate Committee on Energy and Natural Resources

March 18, 1987

Thank you for this opportunity to present our views on renewal of the Price-Anderson Act, one of the most pressing issues before the Senate Energy Committee this year. We have testified on this subject before this, and several other committees, during the 99th Congress.

Our organizations strongly believe that the public deserves a balanced and comprehensive nuclear accident policy. We believe such a policy would accomplish three principle goals: first, it would reduce the possibility of an accident by assuring high standards of industry accountability; second, it would provide full compensation for the public in the event of an accident; third, it would protect taxpayers from paying costs that private industry can afford.

Attached to this statement is a copy of our most recent Senate testimony, which was prepared for the Environment and Public Works Committee last session. This attachment provides a comprehensive statement of our concerns regarding Price-Anderson renewal and bills that were before Congress last year.

The legislative proposal which best satisfies these goals is the Stafford bill from last year (S.1761), with amendment 770. A complete analysis of that bill is in the testimony attached to this statement. This year Senator Moynihan has introduced a similar bill, S.44, which is based in the NRC's 1983 recommendation to Congress. Our organizations support that bill for the same reasons that we supported S.1761, but absent an accountability mechanism such as amendment 770, we do not believe S.44 goes far enough.

At the end of last year an amended version of S.1225 was introduced by Chairman Johnston and others. We expect that a similar bill will be introduced soon. The approach taken in S.1225 has two fundamental flaws: it falls seriously short of assuring full compensation for accident victims, when compared to the NRC's 1983 proposal, and it fails to include a mechanism for contractor accountability. In our testimony today, we would like to focus on these two major points.

CONTRACTOR ACCOUNTABILITY

Under current law, and S.1225 as amended, the financial risks of a nuclear accident are borne by the public, the Federal Treasury and nuclear utilities.

The financial responsibility of nuclear utilities is limited to post-accident assessments of $60 million per plant, spread out over a number of years. The Treasury's financial responsibility for DOE accidents is limited to roughly $6.5 billion, unless Congress passes a bill to provide additional funds. The public's exposure to potential financial losses is not limited.

Under this approach, there are a whole set of potentially-responsible parties who are "missing" from the equation. These are the nuclear contractors.

* Nuclear contractors are totally exempt from any liability for damages to the public.

Nuclear contractors are the companies that design, build and supply parts for nuclear power plants. They are also all of the federal contractors that carry out the Department of Energy's nuclear waste, weapons and research programs.

These nuclear contractors are not required to purchase nuclear liability insurance, nor can they be sued for damages they cause the public. In the event of a nuclear accident, these companies are not responsible for paying a single penny toward public compensation.

This exemption from liability even covers accidents that are caused by gross negligence, bad faith or an intentional disregard for federal regulations.

* According to representatives of the Justice and Defense Departments, exempting companies from liability may reduce incentives for safety.

Debate over the merits of government indemnification of federal contractors was the subject of hearings in the Senate Judiciary Committee last session. Testimony from government and other expert witnesses on Senator Grassley's bill (S.1254, indemnification of federal contractors) suggest a direct link between financial responsibility and a contractor's performance. [1]

One of the fundamental objections raised by the Department of Defense to the Grassley bill pertained to safety:

"We are concerned that blanket indemnification may reduce the contractor's incentive to assume responsibility for the performance of their products by shifting part or all of the liability onto the Government." [2]

Similarly, the Department of Justice testified that:

"...indemnification removes the safety incentive created by the tort system. To the extent liability can be passed to the government, neither the contractors nor the insurers have a financial interest in ensuring that a product is designed and made with the safety of the user in mind." [3]

The Grassley bill would have provided federal indemnity on a much more limited basis than Price-Anderson. Specifically excluded from coverage were "claims or losses caused by the willful misconduct or lack of good faith on the part of any of the contractor's or subcontractor's directors or officers or principle officials" [4] The Price-Anderson Act liability exemptions are without exception.

The connection between liability and safety was specifically acknowledged by T. Richard Brown of TRW, Inc., testifying on behalf of an alliance of contractors. Pointing to the willful misconduct exemption, Mr. Brown stated:

"This caveat ... should defuse any fear that indemnification might encourage contractors to disregard safety." [5]

In response to a question about safety incentives, Mr. Brown further explained, "...if a contractor was careless, they would face the exclusion under the statute for gross negligence and willful bad faith." [6]

If the threat of liability has a role to play in the conduct of DOD contractors, logic would suggest that it would also play a role in the conduct of DOE contractors.

Nuclear risks have always been singled out for special treatment. Given the ultrahazardous nature of nuclear activities, one would expect that the standards of care would be at least has high, if not higher than non-nuclear contractors. Instead they appear to be lower.

* There are serious questions about the DOE's ability to assure safety in its contractors' operations.

The Department of Energy, does not have the authority to impose fines or penalties on its contractors. According to DOE, its contractors are responsible for complying with Federal and State environmental health and safety laws. [7]

However, according to a September 1986 GAO report, DOE operations have contaminated groundwater at 8 of the 9 facilities reviewed; 4 out of 9 facilities were not in compliance with the Clean Water Act, and none of the facilities had final permits for disposing of waste under the Resource Conservation and Recovery Act. [8] This record indicates that DOE has not faithfully complied with federal environmental laws.

Over the past several years, GAO has issued approximately 20 reports documenting unresolved safety and environmental problems at DOE nuclear defense facilities. At a recent hearing in the Senate Government Affairs Committee, J. Dexter Peach of the GAO testified that the agency has "had a long history of recommending both internal and external improvements in safety oversight of DOE's defense production activities." According to Peach, "...self regulation provides only a minimum level of public assurance that these facilities can operate safely. This minimum level, I believe is becoming more and more unacceptable to the public and the Congress as problems and issues surface in the DOE defense nuclear complex." [9]

GAO's strong emphasis on "the important need for independent oversight of DOE's operations" [10] raises serious doubts about the adequacy of DOE's self-regulation and the ability of DOE to assure the safety of its contractors activities.

* The absence of an insurance requirement for nuclear contractors may further weaken safety incentives.

Although the Department of Energy has the authority to require its nuclear contractors to purchase private insurance, the DOE has never exercised that authority. According to DOE, it is more efficient

economically for the Department to provide direct federal indemnification of its nuclear contractors.

The decision to provide direct indemnification for nuclear contractors may make sense from an immediate economic standpoint, but it seems to ignore the potential role of insurance as a risk management mechanism.

Under existing federal indemnification programs for DOD, FAA and NASA, contractors are required to purchase commercial liability insurance.

According to a representative of the Aerospace industry, this insurance plays an important role in assuring safety:

"...the contractor has an incentive to avoid negligent behavior because his insurance rates will increase...if he doesn't act prudently. If a contractor's insurance premiums increase, that increase will reduce his profits. ... Thus, the contractor has a real economic incentive to exercise due care in contractor performance." [11]

To further emphasize this point, the Aerospace Industry Association cited a Department of Commerce study pointing out that "recent increases in the number of products liability claims, policy cancellations, insurance premiums, and average loss per claim have contributed to a situation in which manufacturers are finding it more and more difficult to obtain adequate insurance. The upshot is that many manufacturers are making stronger efforts to improve design and quality control." [12]

He went on to point to another study which concluded: "these developments compel the conclusion that products liability litigation is increasingly forcing manufacturers to improve product safety even when they are insured against claims for product injuries." [13]

Finally, the important role of insurance in regulating hazardous activities was emphasized in last year's Report of the Tort Policy Working Group, a working group composed of 10 agencies and the White House.

This report cited interference with the traditional role of private insurance as a "compelling reason" for rejecting government indemnification. "The insurance industry plays a vital role in promoting public health and safety by policing insureds to ensure that risks of injury are minimized. ... While the role of insurance in promoting public health and safety is by no means perfect ... insurance creates important health and safety incentives which cannot be lightly dismissed."[14]

The absence of an insurance requirement further insulates nuclear contractors from an important market mechanism that appears to play a significant role in regulating other hazardous industries. Because these companies are not required to purchase traditional insurance, it is even

more important to compensate for the risk-management role of insurance through other mechanisms, such as a right of recovery against negligent contractors.

* Other federal contractors are not provided with federal indemnity as broad as Price-Anderson coverage.

As stated above, the Price-Anderson coverage exempts contractors from liability even if an accident is caused by gross negligence, bad faith or willful misconduct. Other laws that indemnify federal contractors, or limit specific types of liability for other industries, do not include such a sweeping exemption.

Under 10 U.S.C. 2354, the Department of Defense indemnifies certain contractors involved in ultrahazardous and nuclear activities. DOD's procurement regulations exclude coverage for willful misconduct and lack of good faith on the part of corporate officers and others who have direct responsibility for contractor operations.

Public Law 85-804, as implemented by Executive Order 10789, contains an exclusion from indemnification for intentional misconduct which is narrower than 10 U.S.C. 2354, but broader than Price-Anderson coverage.

According to a statement by Secretary Herrington, the DOE's standard indemnification policy excludes coverage of liabilities that are the result of "willful misconduct or lack of good faith." [15]

A 1984 Congressional Research Service study compared Price-Anderson coverage with other federal limits on liability. The survey of other laws included programs ranging from Superfund, the Clean Water Act, the Swine Flu Immunization program, and others. According to CRS, "Most other federal statutes strip a defendant of the liability-limitation shield under certain conditions, typically where there is willful misconduct, gross negligence, or the like." [16] (A complete copy of this CRS study is attached in Appendix A).

* Nuclear contractors should not be exempted from liability for reckless behavior, gross negligence or willful misconduct.

Prior to the passage of the Price-Anderson Act, the indemnification agreements between the Atomic Energy Commission and its contractors included a standard exemption for losses resulting from the "willful misconduct or bad faith" of contractors. [17] Many of these contractors are the same as those doing business with DOE today.

According to the record of the 1956 hearings of the Joint Committee on Atomic Energy, the "gross negligence" exemption was dropped because committee members were concerned that members of the public would not be compensated in such instances.

Last session Senator Metzenbaum introduced a bill (S.2072) which would have provided DOE contractor accountability without jeopardizing victim compensation. Under this bill, the government would have been required to provide compensation on a "no fault" basis, similar to the current Price-Anderson system. In contrast to the current system, the government would have been required to recover compensation costs from contractors if an accident was caused by gross negligence or willful misconduct. Similarly, Amendment 770 to the Stafford bill (S.1761) would have allowed utilities that pay into the post-accident compensation fund to seek recovery of those payments if another party, such as a nuclear vendor, was found to be at fault.

* The implications of not requiring contractor accountability are enormous.

The federal government is about to embark an extremely controversial and potentially hazardous activity -- the disposal of high level nuclear waste. Two very fundamental elements are absolutely essential if this program is going to succeed. First, there must be public confidence that the program is being carried out with the utmost attention to safety. Second, there cannot be any careless mistakes.

The Price-Anderson "blanket indemnification" for gross negligence and intentional misconduct is likely to seriously undercut whatever public confidence there might be in the program. Furthermore, we are concerned that this type of coverage may ultimately increase the likelihood of an accident.

ASSURING FULL COMPENSATION

S. 1225, as amended last year raised the liability limit to roughly $6.5 billion. Utilities that own nuclear plants would be subject to a maximum of $60 million per plant, not to exceed $12 million in any single year. While this is considerably more than utilities would be required to pay under the current Price-Anderson Act, it is far less than they can afford.

* In 1983 the Nuclear Regulatory Commission determined that the nuclear industry could afford to pay the full costs of an accident.

Instead of requiring utilities to pay a one-time post-accident assessment of $5 million per plant, in 1983 the NRC proposed a system of annual retrospective assessments. Under the NRC proposal (NUREG-0957), which was sent to Congress with the unanimous endorsement of the five NRC Commissioners, utilities would be responsible for annual assessments of $10 million per plant for as many years as necessary to compensate all public damages. These premiums would not be paid unless an accident actually happens.

By spreading the cost of an accident over a number of years, this proposal would allow the nuclear utilities to pay the full costs of accidents in a way that is both affordable and predictable.

According to NRC studies, $10 million represents approximately 2% of the annual cost of operating a new nuclear plant.[18] The attached chart (Appendix B), shows the estimated rate impact of a $10 million per plant premium on investor-owned utilities. In most cases, the potential rate impact is significantly less than 2%.

S. 1225, as amended, adopts this annual premium proposal (setting the annual retrospective premium at a level of $12 million), but limits the industry's responsibility to a maximum of $60 million. In contrast to the NRC's 1983 recommendation, this compromise arbitrarily limits the annual premiums to roughly 5 years.

By arbitrarily limiting the amount that utilities would have to pay, this bill requires a complex congressional review procedure for accidents that exceed the limit. While the intent behind the congressional review mechanism is to provide full compensation, this bill does not identify a source of funds beyond the limit, nor does it provide accident victims with a legal right to be fully compensated. (A more complete discussion of this provision is in Part II of this statement and the attached testimony.)

* Utilities already pay significantly more than $6.5 billion to insure their own property.

Nuclear utilities currently purchase more than $1 billion of insurance to protect their own property. According to NRC and House Interior Committee reports [19], this insurance costs an average utility roughly $5 million per plant each year. In contrast to the proposed liability premiums, ratepayers pay these insurance premiums every year, regardless of whether there is an accident.

The NRC has projected that 3,193 reactor-years of commercial nuclear power plant operation are anticipated beyond 1987. This does not assume that any additional plants are ordered beyond those already under construction. (20)

If utilities spend $5 million per plant each year in premiums for on-site insurance, close to $16 billion would be paid out over the life of existing plants. If these premiums are adjusted over the years to account for inflation (or to reflect losses), ratepayers of nuclear utilities could pay significantly more than $16 billion for this insurance.

* Utilities already assume responsibility for other fuel-cycle costs.

Under the Nuclear Waste Policy Act of 1982, utilities are subject to a surcharge on sales of nuclear electricity to pay for the high-level nuclear waste program. Utilities currently contribute approximately

$500 million each year into the Nuclear Waste Fund. As the cost of this program escalates, utilities with nuclear plants will be obligated to pay increasing amounts into the Nuclear Waste Fund. Similarly, the full costs of decommissioning nuclear plants are not yet known and will remain uncertain for the financial planners of nuclear utilities for some time to come.

PART II: OTHER ISSUES

In addition to the issues addressed above, we would like to comment specifically on six aspects of S. 1225, as amended last year.

1. The Third Layer:

While the third layer "promise language" in this bill goes further than current law, it does identify a source of funds beyond the limit, or assure full compensation.

In the event of an accident involving damages above the liability limit, Section 5 of S.1225, as amended, "promises" that Congress will "thoroughly review the particular incident" and "take whatever action is necessary, including approval of appropriate compensation plans, to compensate the public in full."

On November 24, 1986, the Congressional Research Service issued a memo comparing S. 1225, as amended, with a similar House bill. According to CRS, "Both vehicles evince a stronger Congressional commitment to full compensation of claims over the liability limit, though the dependence of such compensation on appropriations acts mean that actual compensation is not truly assured. In any event, one Congress can never bind a future Congress." [21]

According to a March 1986 CRS memo concerning S. 1225, "the section 5 representation would likely be regarded by a court as a mere statement of public policy, not binding on a future Congress faced with an actual nuclear disaster.....Thus, while the subcommittee bill no doubt imposes moral pressure on a future Congress to provide compensation over the liability limit, the bill does not appear to establish any legal pressure on the Congress to do so." [22]

2. Length of Extension:

S. 1225 as amended extends Price-Anderson coverage for 20 years, we oppose the 20-year extension contained in this bill. The Price-Anderson Act is an important public policy issue which should be revisited at least every 10 years. Originally intended as a temporary law, each time the Act has been renewed the provisions that benefit the public have been gradually expanded; this is a process that needs to continue.

Furthermore, it is difficult, if not impossible, to predict what the state of the nuclear industry will be 20 years from now. Since the last renewal of Price-Anderson in 1975, approximately 100 nuclear plants have been cancelled. According to the NRC, the licenses of nearly 30 plants will expire during the next 20 years. Finally, the problem of premature aging, which may increase safety problems, and other unforeseeable developments may cause even more plants to go off-line earlier than expected. These are all factors that the Congress should consider in a review of Price-Anderson during the next decade.

3. Punitive Damages:

Last year this Committee adopted an amendment that would prohibit awards of punitive damages against federal nuclear contractors. While the intent of this amendment appeared to be an effort to shield the government from paying punitive damages, the affect of this amendment is much broader. We do not believe that the government should pay punitive damages incurred by its contractors, nor do we believe that insurance should cover punitive damage awards. But we also do not believe that nuclear contractors should be exempt from punitive damages altogether. If the actions of a nuclear contractor are so egregious that a court awards punitive damages, then that contractor should have to pay. As stated in the preceding section, we have serious concerns about the lack of accountability for DOE's nuclear contractors.

4. Compensation for High-Level Waste:

The compensation provisions for nuclear waste accidents in S.1225, as amended, do not appear to satisfy the concerns of the affected states. The states that testified at Price-Anderson hearings during the last session of Congress explicitly stated that removal of the limit on liability, and an assurance of full compensation, is an essential element for their cooperation. This bill does not provide that assurance.

5. Attorneys Fees:

Under S. 1225, as amended, all of the costs incurred by the lawyers representing the industry are paid out of the limited "public compensation" fund. This loophole reduces the incentive to limit legal costs and may actually encourage delays in the settlement of claims. Although it is impossible to predict just how high these costs could be, these legal expenses could substantially reduce the amount of compensation available to the public.

When Congress renewed the Price-Anderson Act in 1975, an amendment was adopted that prohibited the costs of investigating, defending and settling claims from being paid out of the "public compensation" fund. Because of a drafting error, the exclusion of these expenses only applied to the portion of compensation provided directly by the federal government. Now that the direct federal indemnity share has been phased-out for

commercial accidents, these costs can be deducted from whatever funds exist in the post-accident compensation pool.

These costs should be paid by the defendants, and not deducted from the limited public compensation fund.

6. Inflation Index:

The amount of the retrospective premiums should be adjusted annually, according to the Consumer Price Index. The income of electric utilities, as well as their expenses, rise to reflect increases in the cost of living; the annual retrospective premium should also be increased accordingly. This is particularly important if payment of damages claims are spread out over a number of years. S. 1225, as amended, does not include an inflation adjustment.

7. Statute of Limitations:

The statute of limitations under S.1225 allows claims up to 30 years after an accident. The intent of the Price-Anderson statute of limitations was to allow a longer period of time for filing claims than would be allowable under most state tort laws. The Price-Anderson statute of limitations only preempts those state statutes which are more restrictive. Since the last renewal of the Price-Anderson Act, many states have adopted "discovery rules" which require the discovery of an injury before the statute of limitations begins to run. Due to the latent-nature of radiation injuries, a statute of limitations that is based on a "discovery rule" is a more appropriate policy.

CONCLUSION

As the August 1, 1987 expiration date nears, we realize that the Congress will be under enormous pressure to renew Price-Anderson. Our organizations believe that the millions of Americans who are exposed to nuclear risks deserve a comprehensive federal nuclear accident policy. We believe that legislation based on the NRC's 1983 recommendations, with a strong accountability mechanism for nuclear contractors, is a responsible policy. We urge you to give thoughtful consideration to this approach.

Notes:

1. Hearing before the Senate Judiciary Committee, Indemnification of Government Contractors, S.1254, June 11, 1985.

2. Statement of Mary Anne Gilleece, Deputy Under Secretary for Acquisition Management, Office of the Under Secretary of Defense (Research and Engineering), June 11, 1985.

3. Statement of Richard K. Willard, Acting Assistant Attorney General, Civil Division, Department of Jutice, June 11, 1985.

4. S.1254, Sec.5(b)(2): For purposes of this subsection, the term 'principal officials' means any of the contractor's managers, superintendents, or other equivalent representatives who have supervision or direction of (A) all or substantially all of the contractor's business, (B) all or substantially all of the contractor's operations at any one plant or separate location in which a contract is being performed, or (C) a separate and complete major industrial operation in connection with the performance of a contract.

5. Statement of T. Richard Brown, Vice President, Law Department, Electronic and Defense Sector, TRW, Inc., June 11, 1985.

6. Statement of T. Richard Brown.

7. Post-Hearing Questions from Senator Alan Simpson for James W. Vaughan, Acting Assistant Secretary for Nuclear Energy, U.S. Department of Energy, following the October 22, 1985 Hearing of the Nuclear Regulation Subcommittee of the Environment and Public Works Committee, p.494.

8. "Environmental Issues At DOE's Nuclear Defense Facilities," (GAO/RCED-86012; September 1986).

9. Statement of J. Dexter Peach, Assistant Comptroller General, Resources, Community and Economic Development Division, Before the Committee on Government Affairs, U.S. Senate, March 12, 1987.

10. Statement of J. Dexter Peach, March 12, 1987.

11. Aerospace Industries Association Comments on Civil Division, Department of Justice Statement concerning Government Contractor Indemnification, June 11, 1985, from the Senate Judiciary Committee Hearing Record, p.99.

12. AIA comments, see above.

13. AIA comments.

14. Report of the Tort Policy Working Group on the Causes, Extent and Policy Implications of the Current Crisis in Insurance Availability and Affordability, February 1986, p.77.

15. Statement of Secretary John S. Herrington, January 8, 1986, "Environmental Policy Statement of the Department of Energy," as reported by the OCRWM Bulletin.

16. Memo from the American Law Division of the Congressional Research Service, "Industry-Protective Limitations on Liability in Federal Statutes and Treaties," March 19, 1984.

17. Governmental Indemnity Hearings before the Joint Committee on Atomic Energy, 84th Congress, Second Session, May 15, 1956, p.77.
18. "Additional Information on Retrospective Nuclear Liability Insurance Proposed by the NRC," Office of State Programs, U.S. Nuclear Regulatory Commission, April 1985.

19. House Interior Committee Report: "Price-Anderson Amendments Act of 1986," Report 99-636 and NUREG-0957, "The Price-Anderson Act -- The Third Decade," U.S. NRC Report to Congress, December 1983, Subject Report H.

20. Statement of the U.S. Nuclear Regulatory Commission before the Subcommittee on Nuclear Regulation of the Committee on Environment and Public Works, U.S. Senate, October 23, 1985.

21. Memo from the American Law Division of the Congressional Research Service, "Comparison of Leading Price-Anderson Reauthorization Vehicles at the Close of the 99th Congress," November 24, 1986.

22. Memo from the American Law Division of the Congressional Research Service, "Comparison of Three Versions of S.1225 as to Aggregate Liability Ceiling and Congressional Review of Liability Beyond the Ceiling," March 25, 1986.

23. Statement of the U.S. Nuclear Regulatory Commission, October 23, 1985.

APPENDIX A

Congressional Research Service
The Library of Congress

Washington, D.C. 20540

March 19, 1984

TO : Hon. Edward J. Markey
Attn: Richard Udell

FROM : American Law Division

SUBJECT : Industry-Protective Limitations on Liability in Federal Statutes and Treaties

This memorandum responds to your request for a listing of liability limitations in federal law, with a comparison to the liability limitation in the Price-Anderson Act. That Act, 42 U.S.C. § 2210, sets a floating liability ceiling as to parties responsible for injury to the public in a nuclear incident.

Research was confined to those liability limitations offering some parallel to that in the Price-Anderson Act, namely, limitations on the dollar liability of a commercial entity for injury caused by that entity. This rule leads to our exclusion of the following types of provisions, despite their arguable status as "liability limitations":

ceilings on fines/penalties
limits on available government insurance/loan guarantees
limits on government liability per agreement with private party
limits on shareholder liability
limits on liability of credit card holders for unauthorized use
bars on bringing certain types of actions against specified parties

33 U.S.C. § 901 et seq.

The Longshoremen's and Harbor Workers' Compensation Act governs the liability of employers for job-related injury to maritime employees. The Act specifies a fixed-dollar-amount liability for each of several types of injury, and, importantly here, stipulates that such liability "shall be exclusive and in place of all other liability of such employer." Id. at § 905.

33 U.S.C. § 1321

Section 311 of the Clean Water Act bans the discharge of oil and hazardous substances into the navigable waters of the United States. Liability of the discharger for federal cleanup costs may not exceed —

the greater of $125 per gross ton or $125,000, for inland barges
the greater of $150 per gross ton or $250,000, for any other vessels
$50 million for onshore and offshore facilities

Similar liability limits are established for third parties. The President is permitted to set liability limits of less than $50 million for onshore and offshore facilities.

Liability limits do not apply where the United States shows that the discharge was the result of "willful negligence or willful misconduct within the privity and knowledge of the owner."

33 U.S.C. § 1517

Section 18 of the Deepwater Port Act governs liability for oilspills in the vicinity of deepwater ports licensed under the Act. Liability of the discharger for oilspill damage and cleanup costs may not exceed —

the lesser of $150 per gross ton or $20 million, for vessels
$50 million for deepwater port licensees

Liability limits do not apply if it can be shown that the discharge was the result of "gross negligence or willful misconduct within the privity and knowledge" of the vessel owner/operator or port licensee.

42 U.S.C. § 247b(k)

To protect manufacturers of swine flu vaccine from liability for personal injury or death arising from administering the vaccine, other than that arising from the manufacturer's negligence or departure from contract terms, the United States agrees to stand in the shoes of the manufacturer for litigation purposes. The United States is thus to be liable under any applicable theory of state law -- negligence, strict liability, etc.

42 U.S.C. § 9607(c)

Section 107(c) of the Comprehensive Environmental Response, Compensation and Liability Act is concerned with the liability of generators, transporters, and disposers of hazardous substances for cleanup costs and injury to certain natural resources. Such liability may not exceed --

the greater of $300 per gross ton or $5 million, for vessels carrying hazardous substances
the greater of $300 per gross ton or $500,000, for any vessel other than those specified immediately above
$50 million (or a lesser amount established by the President), for any motor vehicle, aircraft, pipeline, or rolling stock
all costs of response plus $50 million for any natural resources damage, for any facility other than those specified immediately above

Liability limits do not apply if the hazardous substance was released as the result of "willful misconduct or willful negligence," or a safety standard violation, "within the privity or knowledge" of the responsible person. The limits also do not apply where such person fails to cooperate with certain governmental cleanup activities.

43 U.S.C. § 1653

Section 204 of the Trans-Alaska Pipeline (TAP) Authorization Act stipulates that the liability of the pipeline right-of-way holder to injured parties is limited to $50 million of strict liability, further liability to be established under ordinary rules of negligence.

Similarly, the liability of a vessel carrying TAP oil for injuries and cleanup costs is capped at $14 million of strict liability. (The TAP Fund covers the next $86 million of damage awards, also with strict liability. Beyond this amount, claims are to be litigated under other federal or state law.)

43 U.S.C. § 1814(b)

Section 304(b) of the Outer Continental Shelf Lands Act Amendments of 1978 addresses liability for oilspill-related injury in connection with offshore facilities and vessels transporting oil from those facilities. Such liability may not exceed —

the greater of $300 per gross ton or $250,000, for a vessel
the total of removal and cleanup costs, "and an amount limited to $35 million for all damages"

Liability limits do not apply when the incident "is caused primarily by willful misconduct or gross negligence," or a safety standard violation, "within the privity or knowledge or the owner or operator " The liability limit for vessels also does not apply when the owner/operator fails to cooperate with federal cleanup efforts.

46 U.S.C. §§ 181-196

The Limitation of Liability Act of 1851 provides that a vessel owner's liability for any loss of cargo on board, damage by collision, or any other loss or damage shall not exceed "the amount or value of the interest of such owner in such vessel, and her freight then pending."

The liability limit does not apply where the acts or omissions causing the loss or damage are within "the privity or knowledge" of the vessel owner.

Warsaw Convention

This treaty, as supplemented by the "Montreal Agreement" (CAB Agreement 18900, approved by Order E-23680, May 13, 1966), limits the liability of air carriers on international flights to $75,000 per passenger in cases of passenger injury or death. It also sets forth liability limits for baggage and cargo.

The liability limit does not apply where the carrier fails to post notice of it, or where there is willful misconduct.

The key distinction between the liability limitation in the Price-Anderson Act and those in the listed statutes is the absence of any exception to the limitation in Price-Anderson. Most other federal statutes strip a defendant of the liability-limitation shield under certain conditions, typically where there is willful misconduct, gross negligence, or the like. By contrast,

the Price-Anderson Act permits no end-runs around its limitation on public liability per nuclear incident, whether there has been negligence, gross negligence, or whatever on the part of entities responsible for the incident.

A second difference between Price-Anderson and some other laws is that the recovery limit in Price-Anderson applies to incidents, rather than to individual plaintiffs (recall the FHLCA and the Warsaw Convention). Thus under Price-Anderson and its like, recoveries of individual claimants have to be reduced where the total of court awards in connection with an incident exceed the Act's liability limitation. Estimates of probable aggregate injury in the wake of a nuclear incident make such fractional recoveries a distinct possibility.

A third difference is that the Price-Anderson limit covers all types of claims that may be brought. Some of the listed statutes (e.g., the Clean Water Act and CERCLA) confine themselves to certain categories of injury, leaving unaffected the pursuit of recovery for other types of injury.

A possible fourth difference is that while Price-Anderson bars recovery beyond its liability limit under any other statute or common law, it is not clearly settled that the same is true for all the listed statutes. Which is to say, the liability limits in some of these statutes may not preempt recovery beyond the stated limit through plaintiff's resorting to other causes of action flowing from the same injury. A full examination of this question is beyond the scope of this memorandum.

You further requested discussion of the 1851 Limitation of Liability Act as invoked after the grounding of the oil tanker Torrey Canyon off the coast of England in 1967. As reported in Gilmore and Black, The Law of Admiralty 823 n.13e and 824 n.13ℓ (1975):

> A $50 fund, representing the value of one salvaged lifeboat, was approved in American limitation proceedings which followed

> the stranding and sinking of the Torrey Canyon off the south-west coast of England in 1967. See In Re Barracuda Tanker Corp., 281 F. Supp. 228 (S.D.N.Y. 1968). The English and French Governments also instituted actions against the owner in Bermuda, Singapore, and Rotterdam. ... [This] litigation was eventually settled out of court for 3 million pounds, to be equally divided between the French and English Governments .... Following that settlement, the limitation proceedings which had been instituted in the United States (and other countries) were discontinued.
>
> [T]he Torrey Canyon episode led to private agreements under which the major world tanker owners, presumably in the hope of discouraging legislation, agreed to accept limited liability for negligent oil pollution.

Finally, you ask for a comparison between the list of federal liability-limiting statutes in Anderson, "Limits on Liability: The Price-Anderson Act Versus Other Laws," 45 J. Risk and Insurance 651 (1978), and the enumeration of federal limitations on liability set out here. Mr. Anderson lists the Warsaw Convention, the Water Quality Improvement Act (later incorporated into the Clean Water Act), the Trans-Alaska Pipeline Authorization Act, and the "swine flu" act. Besides these enactments, this memorandum lists five additional statutes: the Longshoremen's and Harborworkers' Compensation Act, Deepwater Port Act, Comprehensive Environmental Response, Compensation, and Liability Act, Outer Continental Shelf Lands Amendments of 1978, and Limitation of Liability Act of 1851.

Robert Meltz
Legislative Attorney
American Law Division

APPENDIX B

ESTIMATED IMPACT OF $10 MILLION PER PLANT ASSESSMENTS ON INVESTOR-OWNED UTILITIES

UTILITY	ASSESSMENT* (in Millions)	RATE IMPACT** (estimated)
ALABAMA		
Alabama Power	$20	0.8%
ARIZONA		
Arizona PS	$ 8.7	0.7%
ARKANSAS		
Arkansas P&L	$23.6	1.7%
CALIFORNIA		
So Cal Ed	$27.7	0.5%
Pacific G&E	$20	0.3%
COLORADO		
PS of CO	$10	0.9%
CONNECTICUT		
Connecticut L&P	$28.6	1.8%
FLORIDA		
Florida P&L	$38.5	0.8%
GEORGIA		
Georgia Power	$19.2	0.5%
ILLINOIS		
Commonwealth Ed	$125	2.5%
Illinois Power	$8.5	1.1%
INDIANA		
Indiana & Michigan	$20	1.8%
IOWA		
Iowa Electric	$ 7	2.4%
KANSAS		
Kansas G&E	$ 4.7	1.1%
LOUISIANA		
Lousiana P&L	$11.4	0.9%
MAINE		
Central Maine Power	$ 6.6	1.2%

UTILITY	ASSESSMENT* (in Millions)	RATE IMPACT** (estimated)
MARYLAND		
Baltimore G&E	$20	1.5%
MASSACHUSETTS		
Boston Edison	$11.9	1.0%
MICHIGAN		
Consumers Power	$20	1.1%
Indiana & Michigan	$20	1.8%
MINNESOTA		
Northern States	$30	2.1%
NEW HAMPSHIRE		
PS of NH	$ 6	1.1%
NEW JERSEY		
Jersey Central	$15	1.0%
Public Service	$26.5	0.8%
NEW MEXICO		
PS of NM	$ 3	0.7
NEW YORK		
Con Ed	$10	0.2%
LILCO	$11.8	0.7%
Niagara Mohawk	$14.1	0.6%
Rochester G&E	$11.4	2.4%
NORTH CAROLINA		
Duke Power	$52.5	1.8%
Carolina P&L	$34.7	1.8%
MISSISSIPPI		
Mississippi P&L	$ 3.3	0.5%
MISSOURI		
Kansas City P&L	$ 4.7	0.8%
Union Electric	$10	0.6%
OHIO		
Cleveland Electric	$10.7	0.8%
Toledo Ed	$ 8.8	1.4%
Ohio Ed	$10.6	0.6%
OREGON		
Portland GE	$ 6.7	0.8%

UTILITY	ASSESSMENT* (in Millions)	RATE IMPACT**
PENNSYLVANIA		
Met Ed	$10	1.5%
Penn P&L	$18	0.9%
Philadelphia Electric	$37	1.4%
Duquesne	$ 7.5	0.8%
Penn. Elec	$ 5	0.6%
SOUTH CAROLINA		
Duke Power	$52.5	1.8%
Carolina P&L	$34.7	1.8%
TEXAS		
Texas Utilities	$17.6	0.4%
Houston Industries	$ 6.2	0.1%
El Paso	$ 4.7	1.3%
VERMONT		
Central Vermont PS	$ 4.3	2.5%
VIRGINIA		
Dominion Resources	$37.7	1.4%
WISCONSIN		
Wisconsin Elec	$20	1.8%

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* Assessments are based on $10 million per plant. Ownership shares are based on "Electricity From Nuclear Power," Atomic Industrial Forum, January 1986.

** Rate impact was estimated as a percentage of company revenues from sales of electricity, using 1985 financial data. Source: The P.U.R. Analysis of Investor-Owned Electric and Gas Utilities, 1986 Edition, published by Public Utilities, Inc.

The data in this chart was calculated by Environmental Action, February 1987.

ENVIRONMENTAL POLICY INSTITUTE

Testimony of
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Environmental Policy Institute
Friends of the Earth
Nuclear Information and Resource Service
Public Citizen
Sierra Club
Union of Concerned Scientists
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before the
Nuclear Regulation Subcommittee
of the
Senate Committee on Environment & Public Works

October 23, 1985

Thank you for this opportunity to present our views on the renewal of the Price-Anderson Act, one of the most important energy issues before this Committee. As you know, the central question Congress will face is: who should be responsible for compensating the public after a nuclear accident? Our testimony today is divided into two parts.

Part I explores six fundamental issues:

1) What goals should Price-Anderson achieve?
2) Is the current Price-Anderson Act good public policy?
3) How important is industry accountability?
4) How well do the proposals before Congress achieve the dual goals of accountability and compensation?
5) The industry position: contradicting logic
6) The basic issue of fairness

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Part II addresses eight additional issues which are critical to a comprehensive reform of the Price-Anderson Act.

PART I: THE CENTRAL ISSUE OF LIABILITY

WHAT GOALS SHOULD PRICE-ANDERSON ACHIEVE?

As Congress considers a third renewal of the legislation intended to protect the public from the financial consequences of a nuclear accident, it is essential to begin with a thoughtful evaluation of the policy goals that should be achieved. We strongly believe that the public deserves a balanced and comprehensive federal policy which reduces the risk of a nuclear accident and assures full compensation for the public in the event of an accident.

Unlike past renewals, the issue this year is not extension of the Act to assure stability in the nuclear industry's planning process. If Congress simply allowed the Act to expire, every existing nuclear plant, including those under construction, would continue to be covered. Indeed, some will argue that Congress should let Price-Anderson expire, since no utilities have expressed an interest in ordering new reactors. We do not agree.

There are currently 94 nuclear plants covered under Price-Anderson, and about 25 more under construction. A catastrophic accident at any one of these facilities could cause tens of billions of dollars in damage to neighboring communities. The limit on liability for all NRC-licensed activities stands at $640 million. Department of Energy contractors at an estimated 280 facilities are engaged in activities involving risks to the public significant enough to require Price-Anderson indemnity agreements. [1] The liability of the federal government for damages caused by contractor activities is limited to $500 million. If Price-Anderson expires, DOE may not have the authority to enter into new indemnity agreements with its contractors.

One of the most significant differences between this Price-Anderson renewal and those of previous years is the issue of high-level radioactive waste. The DOE is considering sites in 23 states [2] for construction of a high-level nuclear waste repository. Several states being considered for the first repository have strongly objected to the $500 million limit on liability. DOE's insistence on limiting liability for damages to the public arising in the course of transportation, storage and disposal of high-level nuclear waste is threatening the success of the entire repository program.

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The hazards that the Price-Anderson Act was intended to protect against will not disappear with the expiration of the Act; the risk of an accident with catastrophic consequences will continue for decades to come. Although the probability and consequences of a catastrophic nuclear accident continue to be the subject of considerable uncertainty, recent NRC estimates indicate that we may be facing a 50-50 chance of experiencing a core meltdown at a licensed commercial reactor within the next 20 years. If such an event resulted in an off-site release of radiation, NRC documents suggest that a "mean" accident at the Indian Point reactor would cause roughly $10 billion in damages.[3]

A balanced and comprehensive public policy would do the following:

- prepare for a "worst case" accident before it happens, rather than holding victims of a several billion dollar accident hostage to the political vagaries of a future Congress;
- assure that a mechanism is in place to provide timely compensation for all public damages;
- assure complete parity for all nuclear accident victims, rather than establishing a double standard which discriminates between victims of a commercial nuclear accident and those harmed by federal nuclear activities;
- not allow companies that are negligent to be "held harmless" for damage they inflict on the public;
- not provide a "blank check" at taxpayers' expense to cover damages beyond an arbitrary limit;
- stimulate increased coverage and involvement in managing nuclear risks by commercial insurers, and seek private-sector solutions to the greatest extent possible;
- cover all nuclear risks, including federal contractors and the entire nuclear fuel cycle.

In short, a balanced nuclear accident policy would achieve two goals. It would reduce the likelihood of an accident by establishing strong incentives for safety and high standards of industry accountability. And it would establish a system which assures full compensation for all damages to the public if an accident happens. As the next section will explain, the current Price-Anderson system fails to accomplish either of these goals.

IS THE CURRENT PRICE-ANDERSON ACT GOOD PUBLIC POLICY?

The original intent of the Price-Anderson Act was to balance the promotion of the fledgling nuclear industry with the need to protect the public in the event of a nuclear accident. The system as it has evolved over the past three decades is routinely referred to as a "delicate balance" by advocates for the nuclear industry. A close examination of this "balance" reveals a program which grants most of the benefits to the nuclear industry and shifts all of the risks and uncertainties to the public. This conclusion is reached by comparing the financial protection of a utility after an accident with the protection provided for members of the public.

In the event of a serious nuclear accident, the owner/operator of a nuclear plant can rely on the following certainties:

- more than $1 billion in insurance to pay for on-site clean-up and possibly restoration of the power plant;
- insurance to pay for replacement power while the plant is out of service;
- the right to sue the manufacturer, component supplier or architect-engineer for all losses if fault can be established;
- a system of state regulation that has never allowed a utility to become insolvent since the Depression.

In contrast to the protection available to the utility, the public would face the following uncertainties:

- no insurance to cover their homes, businesses or other property;
- no legal right to recover from a manufacturer, architect-engineer or any other party who may have caused the accident -- regardless of negligence or fault;
- a pro-rated share of a $640 million compensation fund -- which at best is likely to compensate only a small fraction of actual losses;
- a vague promise that Congress will consider some action which may or may not prevent large numbers of businesses and individuals from facing bankruptcy.

It is difficult to imagine anyone seriously considering such a system "balanced". The very foundation of our economic system is the principle that excellence is rewarded; yet Price-Anderson tells the nuclear industry: "no matter how negligent, careless or reckless you are, you are not responsible for fully compensating damages you cause the public." The public, on the other hand, is sent the opposite message: "no matter

what precautions you take to protect your health, home or business, it could be destroyed by someone else's carelessness and you have no legal right to full compensation." This is not sound public policy.

HOW IMPORTANT IS ACCOUNTABILITY?

Our organizations strongly believe that the limit on liability, and the "hold harmless" clause which insulates manufacturers, designers and all other participants in the nuclear industry from public liability, remove an important incentive for nuclear safety. We are not alone in drawing this conclusion. A full decade ago former AEC Commissioner William Kriegsman flatly stated: "Do away with it [the limit on liability] and you'd probably see nuclear valves coming off the assembly line in better shape."[4] In 1983 the Heritage Foundation called for elimination of the limit on liability and a greater reliance on free market mechanisms, such as private insurance, for assuring the safety of nuclear plants. Similarly, the National Taxpayers' Union testified before the House Interior Committee last year, arguing that the nuclear industry would be safer if subject to the traditional tests of the marketplace.

The nuclear industry stridently dismisses the possibility that there is any relationship between their performance and the limits on their liability. Industry representatives argue that one need only look at the finances of General Public Utilities after the relatively "minor" accident at Three Mile Island to realize how high the stakes already are. This is a reassuring argument for those who are not familiar with the day-to-day mishaps that plague this industry.

Just how well have the "lessons of TMI" been incorporated into the operating practices of this industry? Last summer's events at the Davis-Besse plant in Ohio are an all too vivid reminder that not every utility has fully incorporated the lessons of TMI into its operating practices. For nearly six years, the NRC and Toledo Edison knowingly allowed a hazardous condition to remain in the plant; it was not until an accident was narrowly averted that any enforcement action was taken. The series of failures at Davis-Besse were strikingly similar to the accident at Three Mile Island.

Industry representatives frequently point to the formation of the Institute for Nuclear Power Operations (INPO) as evidence that the industry is committed to standards of excellence in the operation of nuclear facilities. INPO was created by the nuclear industry after the Three Mile Island accident to supplement NRC regulation, and to serve as an internal "watchdog" of the industry's operations. Testifying on behalf of EEI, ANEC, and AIF, William Lee of Duke Power told a House Interior subcommitee last

June that he believed INPO has done an oustanding job of upgrading the quality of nuclear plants. The Davis-Besse incident shatters any confidence in the industry's ability to regulate itself and in the effectiveness of NRC's oversight. In spite of INPO's ostensible scrutiny, it is clear that little was done to upgrade the quality of Toledo Edison's operations.

The myriad of problems facing this industry have not escaped the attention of even its strongest advocates. To quote Energy Secretary Herrington at a nuclear industry forum earlier this year:

"There is no excuse for bad planning, for mismanagement, for shoddy construction. ...How many more times do we have to read stories like we read two weeks ago that 12 out of 17 licensed operators at one utility failed the NRC requalification exam, before the industry takes strong, dramatic steps at corrective action?"[5]

The public is asking the same question. How many more times do we have to read about utilities falsifying reports, operators failing and/or cheating on their exams, power plants built backwards or on foundations that sink, harassment of inspectors, improper welds, and the myriad of "operator errors" that have become so commonplace?

The list of mishaps and near misses for this industry is not a short one. If isolated, many of the events cited in NRC reports may not be all that significant; however the cumulative effect of these many "small" mistakes could be significant. As we saw at TMI, a series of failures in operator performance can play as critical a role in a nuclear accident as the failure of pumps and valves.

In February 1983 the Salem reactor failed to scram twice within three days, the most serious event since TMI. After the first failure, the utility (Public Service Electric & Gas) tried to put the plant back on line before discovering what had actually failed. The cause of the failure was inadequately lubricated reactor trip breakers. The breakers were not lubricated at all from 1974 to 1982 and were cleaned with the wrong solvent in early 1983. Westinghouse recommends lubrication every six months, however, reports indicate that Westinghouse never sent the manual on proper maintenance to PSG&E. As one NRC Commissioner described the incident: "At best, the failure reflects an intolerable degree of carelessness...."[6]

Although it may be impossible to directly link this "inattention to detail" to the limit on liability, it would not be prudent to dismiss totally the potential impact of full liability on the nuclear utilities' and vendors' performance. While the primary responsibility for regulating nuclear safety rests with the NRC, few federal regulations can be as

compelling as full financial liability when it comes to day-to-day management decisions. Attached is a letter from a member of the NRC's technical staff urging Congress to substantially increase liability for accidents as a means for improving nuclear safety.

Furthermore, the potential role of the insurance industry in reducing nuclear risks is too often overlooked. Insurers have long played an important risk management role in our society, a role which other hazardous industries have benefited from. By providing financial incentives for good performance, rather than punitive fines for carelessness, the insurance industry could have a very constructive impact on nuclear safety. Unfortunately, it is very unlikely that insurers will be willing to play an active role in risk management unless they have more of their assets at stake. Today, the amount of liability insurance they offer for the entire nuclear industry is less than they wrote for Michael Jackson's "Victory Tour" concert series in 1984.[7]

Finally, insulation from public liability resulting from gross negligence and willful misconduct is unheard of for any other industry. Even the drafters of the original "Price-Anderson" legislation included the clause: "the Government shall have no obligation under the indemnity agreement for loss or damages caused by bad faith, willful misconduct or gross negligence..."[8]

If Congress' goal is to reduce the possibility of a nuclear accident, strong incentives for nuclear safety must be increased. The nuclear industry must be held accountable, not harmless for public damages caused by reckless behavior, carelessness and negligence.

HOW WELL DO THE PROPOSALS BEFORE THIS COMMITTEE ACHIEVE THE DUAL GOALS OF ACCOUNTABILITY AND COMPENSATION?

There are three Price-Anderson proposals before this Committee.[9] The following is a brief description of the principal features of each:

S. 1225, introduced by Senators Simpson and McClure increases the compensation fund to somewhere between $1.6 billion and $2.4 billion.[10] This is accomplished by increasing the post-accident assessments from $5 million to $10 to $15 million (subject to the discretion of the NRC) and authorizing a 1 mill per kilowatt hour fee on nuclear-generated electricity up to a maximum of $500 million. (The first layer of coverage continues to be a requirement to purchase the maximum amount of liability insurance, which is currently $160 million.) If damages exceed the amount provided by the three layers of coverage, the President is required to submit a plan to

Congress for providing additional compensation, and Congress is required to act on the President's plan in an expedited manner.

We strongly support two features of this bill. First is the principle of parity between accidents caused by federal nuclear activities and those caused by commercial accidents. We agree that this is an essential feature of any comprehensive Price-Anderson reform.

Second, we endorse the requirement that compensation for an accident resulting from the high-level nuclear waste program should be paid from the Nuclear Waste Fund. When the Nuclear Waste Policy Act was enacted, the Nuclear Waste Fund was intended to cover all of the costs of the nuclear waste program. Any costs incurred for public liability after arising from an accident involving high-level nuclear waste are certainly a cost of the program. To the extent that the DOE plans to comingle military waste with commercial spent fuel, the federal government will be responsible for a pro-rata contribution into the Nuclear Waste Fund.

The stated purpose of S. 1225 is to establish "an equitable, efficient, reliable and comprehensive system, in advance of any accident involving nuclear materials, which provides a mechanism for full compensation of the public in the event of such an accident...." Our organizations strongly support that goal. Unfortunately, S. 1225 fails to achieve its stated purpose. The goal of assuring full compensation for any accident is inconsistent with capping industry liability, unless the source of additional funds is clearly identified and a mechanism for assuring the availability of those funds is created.

The central flaw in S. 1225 is that it allows Congress to dodge the most difficult question: where will compensation beyond the limit come from? The concept of allowing Congress the flexibility to "tailor" a response depending upon the specific details of an accident may be appealing, but it is unrealistic. Supporters of S. 1225 have been very vague about the source of additional funds--suggesting that Congress may want to impose an additional tax on nuclear generated electricity, seek funds from other participants in the industry, or even take action against the specific utility or other party, if warranted. [11]

As Congress, and this Committee in particular, witnessed after the accident at Three Mile Island, assigning responsibility to pay for a nuclear accident after-the-fact is an exceedingly difficult task. Even if Congress overcame the political hurdle of approving a tax on nuclear energy or required some other participant in the industry to pay, the industry would probably challenge such a measure on constitutional grounds. S.1225 explicitly "holds harmless" those who are indemnified for public liability beyond the amounts required under the Act.[12]

Realistically, the only other source of funds for compensating damages beyond the limit is the Federal Treasury. In this time of rising deficits, Congress is well aware of the difficulties that would be encountered in trying to squeeze a few billion dollars out of the budget for the purpose of compensating the public. As we saw in the aftermath of the Texas City Disaster, Congressional compensation efforts are not always prompt or complete.

If the goal of this legislation is to create an efficient, equitable and reliable mechanism for compensating all damages from any accident, it is absolutely essential that Congress make the difficult decision about who will pay before an accident happens. The Price-Anderson Act is an unecessarily complex law, full of out-dated features and dependent upon a series of arbitrary tests and thresholds. Efforts to reform Price-Anderson should concentrate on establishing a simple, fair and predictable system for holding the industry accountable and compensating the public after an accident; S. 1225 goes in the opposite direction.

S. 445, introduced by Senator Gary Hart, retains the existing compensation pool, but removes the limit on liability for commercial power plant accidents. This bill establishes a floor rather than a ceiling for public compensation. Without an arbitrary limit on liability, the nuclear industry would be responsible for determining how much public liability insurance is prudent to carry.

If sufficient coverage is not available through the existing insurance pools, the utilities would utilize self-insurance mechanisms to cover their liability, much like they have for on-site property damage. Given a strong incentive to increase on-site property insurance after TMI, the utilities convinced the insurance pools to nearly double the amount of coverage they were willing to write. In addition, the utilties established a self-insurance program which brought the total coverage for on-site losses to over $1 billion.

Our organizations support this legislation because it establishes the important principle that those who create the risk will be fully responsible for damages to the public. Under S. 445, the level of liability coverage ultimately attained by the utilities is certain to be far greater than the $640 million currently required under Price-Anderson. More importantly, that amount would not be the limit on public compensation. The public would enjoy the same legal right to recovery that utilities currently have --- namely the right to sue a manufacturer, component supplier, or any other party who caused the accident.

While we support this approach over the present system, we acknowledge three shortcomings of this proposal. First, compensation beyond the first layer of insurance may be delayed while the courts determine liability. Second, the public may not be assured full compensation if damages exceed the amount of insurance combined with the assets of the responsible party, or parties. Third, this bill only addresses commercial power plant issues and does not cover nuclear waste or other federal nuclear contractors. For these reasons, we have urged Congress to incorporate a mechanism for assuring industry accountability into a more comprehensive proposal which assures full and timely compensation for any nuclear accident.

S. 1761, introduced by Chairman Stafford, is modeled after the NRC's 1983 Price-Anderson proposal. In the event of an accident causing damages in excess of the amount of private liability insurance ($160 million), each utility would be subject to a $10 to $15 million "retrospective premium" assessment. Utilities would only be responsible for paying this premium after an accident happened, and then only for as long as necessary to compensate all legally valid claims. Damages caused by an accident involving high-level nuclear waste would be fully compensated, out of the user-financed Nuclear Waste Fund.

Chairman Stafford has also introduced an amendment (Amendment 770) in conjunction with this bill, in an effort to make the program more equitable. The amendment would allow utilities to seek reimbursement for their retrospective premiums from any party that may be liable under normal tort law. This amendment corrects a serious flaw in the current Price-Anderson system. Under existing law, a utility that experiences an accident has the legal right to recover all of its damages from a manufacturer, supplier or other party if liability can be established. Under this arrangement, it is conceivable that the utility that has an accident could recover billions of dollars from another party, while non-involved utilities are required to pay retrospective premiums. (For example, after the TMI accident, GPU sued the reactor manufacturer, Babcock & Wilcox, for $4 billion, its entire losses in the accident.) This amendment places a greater financial burden on any party at fault, yet does not delay compensation to the public while the courts are determining liability. (This approach is similar to provisions in the Superfund law.)

Our organizations support this bill, with Amendment 770, because it comes closer to achieving the goals of compensation and accountability than any other proposal on the table.

S. 1761 is essentially a "super insurance" program. It is a bargain for utilities and their ratepayers because it does not impose any

unnecessary costs on the industry. Equally important, it protects the federal taxpayers from becoming the insurers of this private industry by default.

In order to fully understand the economic efficiency of this program, it is useful to compare it with other nuclear insurance programs. Utilities currently pay approximately $5 million per plant in annual premiums for roughly $1 billion of on-site property insurance. These premiums are paid every year for as long as there is radioactive material on-site, regardless of whether there is an accident. Assuming that this insurance is necessary for at least 40 years (the length of the standard NRC license), and assuming no inflation, a utility would pay in the neighborhood of $200 million in exchange for $1 billion of coverage that may never be needed.

In contrast to the terms available under standard insurance arrangements, S. 1761 offers utilities a "super insurance" deal. With annual premiums set at $10 million per plant, close to $1 billion of "insurance" would be available every year for as many years as necessary. Furthermore, no premiums are paid unless there is an accident with serious off-site contamination, and then only for as long as necessary to compensate legally valid claims.

Finally, the amount of the retrospective premium under this program would not pose an unmanageable burden on any nuclear utility. According to the NRC, a $10 million annual premium represents approximately 2% of the annual costs of operating a new nuclear plant. According to NRC studies [13], most nuclear utilities could pay a premium several times greater than $10 million per plant, out of internal cash flow, without increasing electric rates.

In order to better understand how large of a burden this proposal would be on nuclear utilities, we calculated the impact of a $10 million per plant premium for 48 investor-owned utilities with nuclear plants. The attached tables indicate what a $10 million premium represents as a percentage of income available to pay common stock (assuming that state regulators prohibit pass-through of the premium to consumers) and as a percentage of income from through sales of electricity. As a reference point, the anticipated impact on utility rates of nuclear plants under construction on utility rates is also included. These tables were calculated using 1983 financial data. For utilities with nuclear plants under construction, we calculated the annual premium as if those plants were already licensed. (Once these plants are included in the company's ratebase, the actual impact of an annual retrospective premium assessment on rates and earnings is likely to be even lower than indicated in the table.)

As we mentioned earlier, S. 1761 is based on a proposal sent to Congress by the NRC in 1983. At that time, this proposal was unanimously endorsed by the five NRC Commissioners. Last summer it became clear that this proposal no longer had the unanimous backing of the NRC. For the record, it is important to note that this "change of heart" began last spring as a direct result of pressure from the nuclear industry. According to one Commissioner, the NRC's reconsideration of its recommendation began when representatives of a large nuclear utility visited each Commissioner and indicated that the industry would oppose extension of the Price-Anderson Act unless the Commission abandoned its 1983 recommendation. [14] We applaud Chairman Palladino and Commissioner Asselstine for continuing to stand behind the NRC's 1983 proposal, which was developed after extensive and thoughtful study of the issues.

In conclusion, we believe that Chairman Stafford's bill represents a responsible and balanced approach to Price-Anderson renewal. We have several specific recommendations for improving this bill, which are discussed later in this statement.

THE INDUSTRY POSITION: CONTRADICTING LOGIC

Representatives of the nuclear industry advance a variety of complex arguments in support of their position on Price-Anderson. They oppose S. 445, arguing that it is not fair to make nuclear plant owners individually liable for an accident, and that a "free market" solution would not assure enough protection for the public. At the same time, they oppose S. 1761, arguing that it is not fair to make the industry collectively responsible for compensating the public, and that this industry should not be singled out for such "unprecedented" treatment.

The only approach that nuclear industry representatives seem to consider "fair" is one which sets a $1 or $2 billion absolute cap on the industry's aggregate liability. The only bill which has attracted unqualified industry support is H.R. 51 (introduced by Rep. Price), which increases their entire liability exposure to roughly $1 billion, an amount equal to their own on-site property coverage. Industry representatives appear to be willing to "go along with" S. 1225, but thus far only with protests that it assesses them too much.

A close examination of the arguments behind the industry opposition to S. 1761 reveals an absence of logic.

First, they oppose the plan on the grounds that it imposes an unnecessary burden. They argue that even if an accident never happens,

investors would perceive an increase in risk and thus impose an additional "risk premium" on nuclear investments. This argument contradicts other statements that have been made at previous Price-Anderson hearings. William Lee, the Chairman of Duke Power, stressed to a House Interior subcommittee last June that a utility experiencing a severe accident would probably face bankruptcy, even without exposure to public liability. If that is the case, one would assume that investors have already taken this into consideration when financing costs are established. For non-involved utilities, a contingent liability limited to a 2% increase in the annual operating costs of a nuclear plant is miniscule compared to the many other costs an uncertainties of building and operating a nuclear plant.

Second, they argue that it is unfair to make all utilities pay for another company's accident. Yet this is precisely what all utilities have agreed to do when they participate in the on-site property and replacement power insurance programs. These programs include both annual premiums and contingent retrospective premium adjustments. The utilities presumably believe these arrangements are "fair" because the terms of the programs have been agreed to in advance of an accident.

Third, they argue that subjecting manufacturers, suppliers and other potentially responsible parties would destroy the "delicate balance" in the Price-Anderson system. The argument that hundreds of small companies providing parts and services for the nuclear industry would get out of the nuclear business if exposed to public liability is not supportable. Despite the Price-Anderson Act's restriction on the public's ability to sue a nuclear supplier for damages, utilities themselves are allowed to file lawsuits which could bankrupt a manufacturer, supplier, or any other party found to be at fault.

After the accident at Three Mile Island, General Public Utilities filed a $4 billion lawsuit against Babcock & Wilcox for expenses incurred by the utility. Despite its vulnerability to similar lawsuits in the future, B&W continues to be an active supplier in the nuclear industry. As we have seen more recently, a manufacturer or architect-engineer need not even cause an accident to be sued for billions of dollars. Houston Lighting & Power, along with several other owners of the South Texas Project, sued Brown and Root for more than $6.3 billion. While the $750 million settlement reached last summer was termed a "disappointment" by the plaintiffs, it was larger than the entire industry's public liability for an accident.

Finally, industry representatives argue that S. 1761 is unacceptable because it is "open-ended." While stressing that bills which limit liability to $1 or $2 billion will somehow assure full compensation

to the public, industry representatives object to the NRC plan on the grounds that it would impose an a "limitless" burden. We agree that it is impossible to predict in advance of an accident could cost. Yet if the goal of Price-Anderson legislation is to assure full compensation for all damages, then someone has to pay whatever compensation is needed beyond $1 or $2 billion. By supporting S. 1225, and other bills which set an absolute cap on industry liability, the nuclear industry appears to believe that it is fairer to impose this open-ended burden on either taxpayers or ratepayers.

This position is particularly illogical in light of the industry's new "source term" studies which predict that the consequences of nuclear accidents are likely to be much lower than previously assumed. The industry appears to have great confidence in these studies when arguing for reduced emergency planning zones and relaxation of other NRC regulations; they seem to abandon them when arguing for Price-Anderson renewal.

THE QUESTION OF BASIC FAIRNESS

At the heart of the Price-Anderson debate is the issue of "fairness." All sides agree that there should be full compensation, and all sides agree that the system should be "fair." Unfortunately, there is a wide divergence of views on what constitutes "fairness."

Our organizations believe that S.1761, with Amendment 770, is the fairest approach for four fundamental reasons.

1) Sufficient funds would be available to compensate all public damages. Victims would not be dependent on future Congressional action, and taxpayers would be protected from becoming the ultimate insurers of this private industry.

2) Each utility's exposure is manageable, predictable and limited on an annual basis. Unlike construction cost overruns, unanticipated operating expenses and the myriad of other unpredictable and potentially crippling costs, potential liability exposure would be both predictable and manageable. (Of course any company that causes an accident could be subject to greater liability if suits from contributing utilities were successful.)

3) It provides the benefits of full liability insurance without the normal costs. Unlike standard insurance, premiums are only paid after a loss occurs, and then only for as long as necessary to pay claims. As we discussed in the previous section, the economic efficiency of this program provides significant benefits to both utilities and their ratepayers.

4) It provides the benefits of traditional tort liability without all of the burdens. Compensation is not delayed by litigation establishing liability, yet those who contribute to the fund are allowed to recover their payments from plant designers, manufacturers, or others if fault is established.

Our organizations believe that S. 1225, and any other proposal which similarly sets an artificial and absolute cap on industry liability, is the least fair approach to Price-Anderson reform. S. 1225 has three primary flaws.

1) It fails to identify who will pay if an accident causes damages beyond the liability cap. Once the utilities are relieved of their "share," the only other place for the burden to fall is either the taxpayers or the victims. We believe it is more fair to require the industry to collectively shoulder this burden, than it is to shift these costs to victims or taxpayers.

2) Victims of an accident that exceeds the artificial liability limit are dependent on future, and uncertain, Congressional action before any compensation beyond the cap is available. The expedited Congressional procedure mandated in S. 1225 can require Congress to vote on a compensation plan, but it cannot guarantee that a plan providing full compensation will be approved.

3) Any company that causes an accident through recklessness, negligence, and even willful misconduct is "held harmless" for damages to the public. We believe that each participant in the nuclear industry should be held fully accountable for damages it causes.

Our organizations strongly believe that the most equitable and responsible approach to Price-Anderson renewal is to clearly identify who will pay for an accident, without arbitrary limits, in advance of an accident. S. 1761 does this, S. 1225 does not. There is no question that Congress will want to study the cause and extent of damages after a serious nuclear accident. If S. 1761 were in place, Congress could exercise its authority to intervene in the compensation program at any time. If Congressional action is delayed, or stalemated, victims would continue to receive compensation. The alternative, S. 1225, requires Congress to reach a very difficult consensus before any compensation beyond the limit can begin. We do not believe this is fair or responsible.

THE CHALLENGE:
ENACTING FAIR AND RESPONSIBLE LEGISLATION

Our organizations support S.1761 with Amendment 770, because it is a balanced and responsible approach to Price-Anderson renewal. In order to make this bill more comprehensive and more fair, we recommend four modifications.

1) Include a provision for advance borrowing authority. One potential problem of an annual assessment plan is that there may not be sufficient funds available to provide fair compensation durinf the first few years after an accident. The NRC, in conjunction with the court handling the claims, should be given the authority to borrow from the federal treasury, if necessary, to compensate claims on a timely basis. Any money borrowed should be paid back, with interest, as nuclear plant owners are assessed over the years.

2) Include an inflation index. The amount of the retrospective premiums should be adjusted on a regular basis to keep pace with inflation. S. 1761 allows the NRC, through a rulemaking, to increase the premium to $15 million if circumstances changed. As inflation decreases the value of money over time, the retrospective premium should be adjusted as well. This is particularly important if payment of public damage claims are spread out over several years.

3) Include a "deductible" provision. Instead of having industry-wide assessments begin after current liability insurance is exhausted ($160 million), nuclear plant owners should be required to cover the first few billion dollars of damages. Utilities could cover this layer through increased private insurance and/or self-insurance programs. This modification would put the nuclear industry on a more equal footing with other hazardous industries. Furthermore, it would make an annual assessment program more fair because premiums and terms for the initial layer of coverage would be set by the industry itself, much like their on-site property insurance arrangments. Finally, this modification would be an important step toward "privatizing" nuclear liability risks; the retrospective premium requirements would only be necessary for accidents of a magnitude greater than a private "market solution" could accommodate.

4) Include coverage for all DOE nuclear contractor accidents. In addition to the nuclear waste program, federal contractors at an estimated 280 sites around the country are covered under Price-Anderson indemnity agreements. Federal indemnity for these contractor activities should continue under Price-Anderson, but with no limit on public compensation. If a contractor causes an accident through negligence, the DOE should seek to recover from that contractor whatever federal compensation was paid.

In addition to these modifications, we support several other amendments to S. 1761. These amendments involve features of the Price-Anderson program covered in Section II of this statement; they include the ENO provisions, the statute of limitations, compensating latent injuries, transaction costs, coverage for acts of sabotage, payment of emergency response and precautionary evacuation costs. A description of each of these issues, and our recommendations for amendments follow.

PART II: THE OTHER ISSUES

In addition to the fundamental question of the limit on liability addressed in Part I, there are several other issues which Congress needs to address in a comprehensive reform of Price-Anderson. The following is a brief discussion of each of these issues.

DOE ACTIVITIES: The Limit on Liability Becomes A Roadblock

As we mentioned in Part I, DOE is insisting that the $500 million limit on liability which applies to federal contractors should cover the high-level nuclear waste program. States that have been chosen as candidates for the first repository have strongly opposed any limit on federal liability for high-level waste activities. Ironically, the Price-Anderson Act---which was enacted in order to remove a "roadblock" 30 years ago---has become a roadblock itself, threatening the success of cooperation agreements between the DOE and state governments and ultimately the success of the repository program itself.

The Price-Anderson limit on liability was originally enacted in 1957 for the primary purpose of encouraging private investment in commercial nuclear energy. There is no legal or politically supportable reason to arbitrarily limit the federal government's liability for its contractors' accidents.

DOE and its contractors argue that Price-Anderson coverage is essential for the continuation of many government contractor activities, including much of the defense system. It is interesting to note, however, that before the passage of the Price-Anderson Act in 1957, the Atomic Energy Commission had very similar indemnity agreements with many of the very same contractors. There were two essential differences between the pre-1957 indemnity agreements and the current Price-Anderson Act. First, these agreements covered all public liability without any arbitrary monetary limit. Second, they made the contractor responsible for public liability if an accident was caused by "gross negligence, willful misconduct or bad faith."[15]

RECOMMENDATION: DOE should be responsible for fully compensating all damages to the public resulting from its nuclear contractor activities. DOE should be allowed to indemnify its contractors against the risk of public liability. If an accident is caused by contractor negligence, DOE should seek to recover of the amount of compensation through legal action against the contractor. Compensation for accidents involving the transportation, storage or disposal of high-level nuclear waste should be paid out of the Nuclear Waste Fund, established by the Nuclear Waste Policy Act of 1982.

THE WAIVERS OF DEFENSES: Relatively Meaningless

The extraordinary nuclear occurrence (ENO) threshold and the "benefits" which the public derives from the waivers of defenses is probably the most misunderstood feature of the Price-Anderson Act. These "no-fault" provisions are often used by supporters of Price-Anderson to demonstrate the "public benefits" of the system. The implication is that the nuclear industry has agreed to give something up in exchange for the public accepting a limit on the industry's liability. A closer look at the ENO provisions shows that the industry has very generously given up something it is not likely to have in the first place.

After a nuclear accident, the NRC (or DOE) is required to determine whether the event was an "extraordinary nuclear occurrence." The criteria used by the NRC are totally arbitrary, requiring a specific amount of off-site injuries and property damage. After the accident at Three Mile Island, the process proved so cumbersome that it took the NRC a full year to conclude that the accident was not an ENO. (The NRC recently issued a proposed rule revising the ENO criteria.) For the purpose of "efficiency" the ENO determination is not reviewable by any court. The arbitrary ENO distinction implies that persons suffering from a less serious accident should have to meet tougher conditions in order to recover than victims of a more serious accident.

If an accident is not an ENO, any claims for compensation are subject to normal state tort law. In most states the common law renders persons engaging in ultra-hazardous activities to be subject to "strict liability," which means that those filing claims do not have to prove negligence; all they must prove is the cause and extent of their damages.

If an accident is an ENO, then the "no fault" provisions of Price-Anderson are triggered. These essentially function the same as a strict liability standard, and therefore are of relatively little value in any state that already applies a standard of strict liability for

ultra-hazardous activities. The ENO provision also requires defendants to waive a number of other legal defenses, including the state statute of limitations. Most legal analysts conclude that, except for the statute of limitations, none of these defenses are likely to be available to a nuclear power plant operator after an accident.

When the NRC submitted its recommendations on Price-Anderson to Congress in 1983, two Commissioners recommended that the ENO be redefined to include any "nuclear incident." As defined in the Atomic Energy Act, a nuclear incident is any occurrence which causes bodily injury or property damage as a result of materials released from a nuclear facility. Expanding the definition of an ENO would allow claims to be judged on their individual merits, rather than by reference to the severity of the damages suffered by other parties. This change would help establish an expedited legal process and eliminate the possibility that persons suffering injuries in different states would face unequal legal obstacles.

Supporters of the ENO concept argue that broadening it to include all nuclear incidents would encourage "nuisance suits." No legal standard, whether strict liability or ordinary negligence, can prevent claims from being filed. Plaintiffs already face an enormous burden in proving the cause and extent of their damages. If claims of questionable merit are filed, the strict liability standard on its own will not result in unjustifed awards.

RECOMMENDATION: The ENO definition should be amended to include any event which is considered a "nuclear incident" as defined in the Atomic Energy Act.

THE STATUTE OF LIMITATIONS: Outdated and Inequitable

In the event of an ENO, the Price-Anderson statute of limitations recognizes claims filed within 3 years of discovery, but not longer than 20 years after the accident. The effect of this statute of limitations is to arbitrarily dismiss many claims for latent injuries. According to medical research, approximately 4 out of 5 radiation-induced illnesses would not become apparent until more than 20 years after exposure. [16]

The intent of this statute of limitations was to allow a longer period of time for filing claims than would be allowable under most state tort laws; the Price-Anderson statute of limitations only preempts those state statutes which are more restrictive. Since the last renewal of the Price-Anderson Act, many states have adopted "discovery rules" which require the discovery of an injury before the statute of limitations begins

to run. At least 36 states have adopted discovery rules [17], most of which would allow claims beyond the 20 year Price-Anderson statute of limitations.

As a practical matter, the insurance industry is strongly opposed to any increase in the length of the Price-Anderson statute of limitations. The insurers argue that their foreign reinsurers are not accustomed to such long statutes of limitations and are likely to withdraw insurance capacity if the statute of limitations were extended. This argument misses two critical points. First, as mentioned above, the effective statute of limitations in most jurisdictions is likely to be more than twenty years. Second, any accident which causes serious enough off-site damage to warrant concern about latent injuries is likely to cause more than $160 million in early damages. Since the insurers cover the "first dollar" of loss, they should expect to pay all of their $160 million in coverage very shortly after the event. Persons filing claims for latent injuries are likely to have an extremely difficult, if not impossible, task in proving the causal link between the accident and their injury. It is highly unlikely that awards for latent injuries will be successful if the immediate damages from the accident were less than $160 million.

RECOMMENDATION: The statute of limitations should assure fair and uniform treatment of latent injuries. A discovery rule, recognizing claims that are filed within 5 years after the discovery of the injury and the cause of action, should be substituted for the current 20-year statute of limitations.

COSTS OF INVESTIGATING, DEFENDING AND SETTLING CLAIMS: Encouraging Excessive Legal Costs

One of the most pervasive myths about Price-Anderson is that claims will be paid immediately after an ENO, without the usual legal hassle. While there is no doubt that the waivers of defenses will reduce legal expenses and time in court, the fact that all parties will probably need lawyers to go through the process is often overlooked. Even with the "no fault" system, claims filed by the public are likely to be challenged by lawyers hired by the insurance pools -- a process which will certainly be costly. (For example, a person who lost the use of a farm may find that the insurance pools do not agree with him on the value of his land and inventory; the industry lawyers would be expected to challenge the amount of the claim and offer a settlement.) One of the most egregious loopholes in the system is that it allows all of the costs incurred by the lawyers representing the insurance pools' interest to be paid out of the "public compensation" fund.

When Congress renewed the Price-Anderson Act in 1975 an amendment prohibiting the costs of investigating, defending and settling claims from being paid out of the "public compensation" fund was adopted. Because of a drafting error the exclusion of these expenses only applied to the portion of compensation provided directly by the federal government. Now that the direct federal indemnity share has been phased out, these costs can be deducted from whatever funds exist in the post-accident compensation pool.

Because this loophole pays the industry lawyers out of the public compensation pool, they will have no incentive to limit legal costs; in fact they will have good reason to resist claims and delay settlement. These legal expenses could substantially reduce the amount of compensation available to the public. Although it is impossible to predict ahead of time just how high these costs might be, the response of the insurance industry is very revealing. Unlike standard insurance policies which pay for all costs of investigating, defending and settling claims in addition to the policy limits, the nuclear insurance pools have insisted writing policies for nuclear risks which include all of these costs within the policy limits.

RECOMMENDATION: Prohibit these costs from coming out of any public compensation fund, including the liability insurance provided by the nuclear insurance pool and any funds generated from post-accident assessments of utilities.

COMPENSATING LATENT INJURIES: Assuring Adequate Funds Over A Long Term

The difficult problem of developing a fair system for compensating latent injuries is shared by many hazardous industries. When there is a limited amount of money to compensate all immediate and long-term injuries, the problem is compounded. The current Price-Anderson Act requires the federal judge administering the compensation fund to set aside an unspecified portion of money to compensate late-arising claims. As was pointed out in the discussion above, the 20-year statute may effectively preclude many otherwise valid claims. A less restrictive discovery rule is likely to run into the problem of an exhausted compensation fund.

There are two fundamental challenges. First, assuring adequate compensation funds over several decades. Second, establishing a system which fairly compensates people for injuries for which there is a difficult burden of proof.

The first challenge is most appropriately solved through the NRC's annual assessment proposal. Any compensation system which begins with a strictly limited pool is likely to either undercompensate immediate victims because funds are reserved for future injuries, or vice versa. If a system of annual assessments were adopted, there would be an assured source of funds to compensate claims well into the future if needed, yet large amounts of money would not necessarily need to be reserved for that purpose.

The second challenge is more difficult. Courts and policy makers around the country are grappling with this in cases involving people exposed to radiation from nuclear weapons tests and workers exposed to asbestos. Persons suffering injuries face an almost insurmountable burden in proving the causal relationship between their illness and their exposure to a particular chemical, toxic agent or event.

RECOMMENDATION: This is an enormously difficult problem which is made even more difficult with an absolute cap on public compensation funds. Congress should appoint an independent study commission to examine this problem as it relates to nuclear accident victims and evaluate options that are being used for other hazards. This commission should be required to submit a report to Congress recommending the approaches, if any, that should be incorporated into the Price-Anderson Act.

SABOTAGE: Ending The Ambiguity

The Price-Anderson Act covers accidents to the public resulting from sabotage, as long as the release of radiation takes place either at the facility site or along a planned course of transportation. If material is diverted away from the site, or planned transportation route, it is not clear whether Price-Anderson coverage would apply. It is essential that the owners and operators of nuclear facilities take every conceivable precaution to prevent sabotage. This was an issue which was debated at length during the 1975 renewal of Price-Anderson. An amendment closing the gaps in coverage passed the Senate but was dropped by the Conference Committee. Thus, the issue remains unresolved.

RECOMMENDATION: Any damage to the public caused by the release of nuclear materials should be compensated in full under Price-Anderson. If the material can be traced to a specific facility, the owner/operator of that facility should be strictly liable for all damages to the public. If the material cannot be traced to a specific source, the federal government should compensate all public damages.

PRECAUTIONARY EVACUATION: Covering All Expenses

In the event of an accident where a release of radiation is anticipated but does not actually occur, the costs of a precautionary evacuation could be quite significant. Coverage under the Price-Anderson Act is not triggered if there is no actual release of radiation. Any costs incurred by members of the public during a precautionary evacuation are not specifically covered under Price-Anderson. If the evacuation were triggered by an event at a commercial nuclear facility, the liability insurance coverage provided by the nuclear insurance pools would probably cover these costs. If the evacuation were triggered by an event at a DOE facility, or as a result of an accident involving a DOE shipment of nuclear materials, the costs would not be covered under the current Act.

RECOMMENDATION: Any costs incurred by the public resulting from a precautionary evacuation should be explicitly covered by the Price-Anderson Act.

EMERGENCY RESPONSE COSTS: An Unfair Burden For States

The costs incurred by state and local governments in providing emergency response services during a nuclear accident are not specifically covered under the Price-Anderson Act. These costs could represent a significant financial burden on a state or local government.

RECOMMENDATION: Emergency response costs incurred by state and/or local governments should be fully reimbursed under the Price-Anderson system.

NOTES:

1. Government Accounting Office Report: "Congress Should Increase Financial Protection To The Public From Accidents At DOE Nuclear Operations," September 14, 1981.

2. Five states are being considered for the first repository: Washington, Nevada, Texas, Utah, Mississippi and Louisiana. Seventeen states are being considered for the second repository: Connecticut, Georgia, Maine, Maryland, Massachusetts, Minnesota, Michigan, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Vermont, Virginia and Wisconsin.

3. In August 1983 a draft of NUREG-0957 (the NRC Report on Price-Anderson) was circulated widely. The draft report contained a section on nuclear safety which summarized previous studies of accident probabilities and consequences. The estimate of $10 billion for a mean accident at Indian Point was cited on page C-7 of that draft. Press reports at the time indicated that representatives of the nuclear industry were displeased with the discussion of accident consequences. When the final report was approved by the NRC Commissioners, the section on nuclear safety had been dropped.

4. "Nuclear Power: Hard Times and a Questioning Congress," Science, vol.187, March 21, 1975, p.1060.

5. Energy Daily, May 9, 1985, p.1.

6. Inside NRC, March 7 and 21, 1983.

7. Michael Jackson's 1984 "Victory Tour" concert series was insured for approximately $250 million. Business Insurance, July 16, 1984.

8. Hearings of the Joint Committee on Atomic Energy on Government Indemnity for Private Licensees and AEC Contractors Against Reactor Hazards (May 15, 16, 17, 18, 21 and June 14, 1956), p.44.

9. Four bills have been introduced in the House: H.R. 51, introduced by Rep. Mel Price (D-IL), H.R. 445, introduced by Rep. John Seiberling (D-OH), H.R. 2524, introduced by Rep. Sid Morrison (D-WA), H.R. 2665, introduced by Rep. Ted Weiss (D-NY).

10. The assured aggregate limit on industry liability under this bill would range from $1.6 billion to roughly $2.4 billion. The $1.6 billion estimate assumes a $10 million assessment of the 94 nuclear plants currently licensed. The $2.4 billion estimate assumes 115 nuclear plants at a $15 million assessment.

11. Remarks made by James Curtiss, Majority Counsel, SubcommOttee on Nuclear Regulation of the Senate Environment and Public WorkO Committee, before the Energy and Environment Committee of the National Oovernors Association, Chicago, Illinois, May 13, 1985.

12. S. 1225, page 5, lines 1-3 and page 7, lines 10-11 and page 12, lines 18-22, the liability of the licensees is explicitly limited.

13. "Additional Information on Retrospective Nuclear Liability Insurance Proposed by NRC," Office of State Programs, U.S. Nuclear Regulatory Commission, April, 1985.

14. [Prepared] Statement of James K. Asselstine, Commissioner, U.S. Nuclear Regulatory Commission, before the Subcommittee on Energy and the Environment, House Committee on Interior and Insular Affairs, June 4, 1985.

15. Hearings of the Joint Committee (see #8 above), pp. 76-85.

16. Advisory Committee on the Biological Effects of Ionizing Radiations, National Academy of Sciences/National Research Council, 1972 (commonly known as the BEIR Report), as cited by Daniel W. Meek in "Nuclear Power and the Price-Anderson Act: Promotion over Public Protection," Stanford Law Review, January 1978, p. 416.

17. Injuries and Damages from Hazardous Wastes--A Report to Congress in Compliance with Section 301(e) of CERCLA, September 1982, Part 2, pp. 13-78 and Superfund 301(e) Study--Update, Congressional Research Service, April 15, 1985. As cited in "Fact Sheet: Statutes of Limitations for Toxic Torts," by Janet Hathaway, Staff Attorney, Public Citizen's Congress Watch, Washington, D.C.

The CHAIRMAN. I do not understand on the waste program what you are saying. You are saying the waste program is not covered?

Ms. KEHOE. The waste program is covered. What I am saying is that the problems of Price-Anderson, both that there is a limit on the compensation that may be available in the event of an accident, and the absence of an accountability mechanism for DOE's contractors may further jeopardize the waste program's success in terms of the public's confidence in the program and, in fact, the very operation of the program.

If Department of Justice and Department of Defense can come here and say, "Exempting companies from liability is a disincentive for safety," and maybe they are right and maybe they are wrong, but if that is the case for DOD, then maybe it is also the case for the people who build the casks.

The CHAIRMAN. I misunderstood. I thought you were saying they were not covered.

Ms. KEHOE. No.

The CHAIRMAN. I understand.

Ms. WELCH. Senator, if I may add to that, as you probably recall, last year the states testified before this Committee and before several other Committees in Congress, the affected states for nuclear waste, that in fact they supported very strongly a removal of the liability cap as it related to nuclear waste accidents.

In particular, the State of Washington has refused to sign an agreement with the Department of Energy to go forward in cooperation on the waste program, in part because of the cap on liability. That is another reason why we feel the liability issue stands as an obstacle to the success of the waste program.

The CHAIRMAN. Did you have anything further to add, Ms. Welch?

Ms. WELCH. No, I do not.

The CHAIRMAN. Thank you very much for your testimony. It has been very helpful to the Committee. If you will supply that quote for us, and indeed, any other information, particularly on the Grassley bill, we would be interested in having that.

Ms. KEHOE. We will. Thank you, Senator.

The CHAIRMAN. Thanks to all the witnesses. The Committee will adjourn.

[Whereupon, at 12:10 p.m., the hearing was adjourned.]

APPENDIXES

Appendix I

Responses to Additional Committee Questions

POST-HEARING QUESTIONS AND ANSWERS

RELATING TO THE

MARCH 18, 1987 HEARING

BEFORE THE

SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

WITNESS: JAMES W. VAUGHAN, JR.

PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR NUCLEAR ENERGY

U.S. DEPARTMENT OF ENERGY

QUESTIONS FROM SENATOR JOHNSTON

Impact of Expiration

Question I(a): Renewing the Price-Anderson Act by August 1 will be a difficult task. Please tell us what will happen if we do not meet that date.

Answer: If the Price-Anderson Act is not extended by August 1, any contract currently in effect would continue to provide Price-Anderson indemnification until its expiration date; however, the Department could not provide Price-Anderson indemnification under any contract executed after August 1. Existing contractors and potential contractors may refuse to continue to do business with the Department if our authority to afford contractors Price-Anderson indemnification is allowed to expire. These contracts include those for the management and operation of major DOE nuclear facilities. The strong reluctance to perform nuclear-related work for the government could extend to those subcontractors, suppliers, and vendors currently covered under the omnibus, or "umbrella," provision of Price-Anderson. The result would be the inability of the Department to effectively conduct its nuclear programs and fulfill its statutory responsibilities.

Answer 1(a) (continued): Additionally, Price-Anderson's forward-looking structure and framework, established by Congress in 1957, remains equally important today in assuring that our future electricity needs can be met, in part, by new nuclear powerplants, as part of a balanced and mixed U.S. energy supply system.

QUESTIONS FROM SENATOR JOHNSTON

Impact of Expiration

Question 1(b): Does the Department have any other means by which to indemnify its contractors?

Answer: DOE may be able to indemnify its contractors through its general contracting authority, subject to the availability of appropriated funds since the Comptroller General ruled in 1983 that no open-ended indemnities can be promised without statutory authority to contract in advance of appropriations.

The Department could utilize Public Law 85 804 to indemnify its prime contractors, although there are two significant disadvantages to contractor indemnification under this law (as contrasted to Price-Anderson).

While subcontractors and suppliers to a prime contractor may be indemnified under the provisions of Public Law 85-804, it would be necessary to include such coverage explicitly in each subcontract. Persons who do not have a contract that explicitly contains an indemnification provision who may be liable for a nuclear incident (e.g., the driver of a vehicle

QUESTIONS FROM SENATOR JOHNSTON

Impact of Expiration

Question 1(c): Has the Department worked out a contingency plan on what it will do if it appears that the August 1 date will not be met? Please tell us what your contingency is.

Answer: The Department has not developed a contingency plan in the event that the Price-Anderson Act is not renewed prior to August 1, 1987. As noted in our answer to Question 1(b), there are two possible options which could be used by the Department in the event our authority to indemnify our contractor expires. DOE does not consider either option desirable because each option fails to provide "umbrella" coverage for subcontractors or suppliers. This, in turn, could delay the payment of claims to injured parties in the unlikely event a major accident were to occur involving the Department's nuclear operations.

QUESTIONS FROM SENATOR JOHNSTON

Question 2(a). What authority does the Department have to indemnify its contractors, under its General Contracting Authority, embodied in Public Law 85-804? How would this work?

(b): What are the limits on the level of indemnification DOE could provide under 85-804?

(c): What level of protection would be provided to the public using such a mechanism?

(d): Would this mechanism be possible to use as a stopgap measure if we are not able to meet the August 1 deadline?

Answer 2(a): Federal agencies may not indemnify their contractors in advance of appropriations without express statutory authority unless the indemnity is limited to the amounts available for obligation at the time loss occurs and nothing can be construed to bind the Congress to appropriate additional funds to make up any deficiency. 62 Comp. 361 (1983). Indemnification under our general contracting authority would be limited in amount in accordance with the above-cited Comptroller General's decision and therefore would provide significantly less protection than that afforded under either Price-Anderson or Public Law No. 85-804.

The Department could indemnify most of its nuclear contractors pursuant to Public Law No. 85-804 utilizing the procedures in the Federal

Acquisition Regulations. These procedures require that the Secretary make a determination for each contract and subcontract that an indemnity provision would facilitate the national defense .

(b): Although there is no explicit limitation on liability attached to indemnities afforded pursuant to Public Law No. 85-804 and its implementing regulations, compensation would be available only through the Congressional appropriations process.

(c): See response to Question 1(b).

(d): At this time, it would be extremely difficult if not impossible to provide indemnities under Public Law No. 85-804 as a stopgap measure to cover all the activities conducted under the prime contracts due to expire in September.

QUESTIONS FROM SENATOR JOHNSTON

Question 3. As I understand it, the Department has four major facilities for which contracts must be renewed by September 30. What are these facilities?

Is the Department taking steps to renew these contracts prior to August 1, in case we are unable to renew the Act by that date? If not, why not?

Do you believe these contracts can be negotiated and signed prior to August 1?

Answer 3: Contracts for the operation of the following facilities expire on September 30, 1987:

1) Los Alamos National Laboratory (operated by the University of California).

2) Lawrence Berkeley Laboratory (operated by the University of California).

3) Lawrence Livermore Laboratory (operated by the University of California).

4) Gaseous Diffusion Plant near Portsmouth, Ohio (operated by Martin Marietta Energy Systems).

5) Facility for Extrusion of Fuel Elements in Ashtabula, Ohio (operated by RMI Co.).

6) Hanford Engineering Development Laboratory (operated by Westinghouse Hanford Company with support services from Rockwell Hanford Operations).

The Department has not taken steps to renew these contracts prior to August 1. We submitted a report to Congress on August 1, 1983 recommending renewal of our Price-Anderson indemnity authority and had expected new legislation to pass at least before the end of last session. We are still hopeful that the differences among various Congressional committees can be resolved and a compromise bill will be enacted prior to August 1.

We do not believe that these contracts can be negotiated and signed prior to August 1. The extension of a DOE operating contract involves a complex procedure wherein the head of the contracting activity must submit a memorandum that recommends either extending or not extending a management and operating contract together with attachments supporting that recommendation at least 18 months prior to expiration of the contract. Once renewal is authorized, a schedule is

set for negotiation with a deadline for contract renewal on the date of expiration.

QUESTIONS FROM SENATOR JOHNSTON

Question 4. Have the contractors with whom you are negotiating asked the Department to take any special precautions to assure them that federal indemnity will be available?

Answer 4: Several of our contractors have expressed concern over the delay in renewal of our Price-Anderson authority. These concerns have centered on the need for Price-Anderson, rather than on a need for alternatives to Price-Anderson, since no alternative provides the unique umbrella protection that our contractors depend on to ensure adequate and responsible subcontractors and suppliers.

QUESTIONS FROM SENATOR JOHNSTON

Question 5. What is the next date on which contracts will expire?

-- which contracts?

Answer 5: The next contract for operation of a DOE facility that will expire after those listed in our answer to Question 3, would be the contract with Associated Universities Inc. for operation of Brookhaven National Laboratory. That contract expires on December 31, 1987.

QUESTIONS FROM SENATOR JOHNSTON

Question 6: Have your contractors been notified that the Act may not be extended by August 1? If not, why not?

Answer: DOE has not formally notified its contractors that the Act may not be extended by August 1 since we believe that Congress will complete the actions necessary to enact legislation prior to that date.

Notification of DOE contractors at this time may result in contractors unnecessarily electing to discontinue their contractual efforts with the Department, thus jeopardizing the Department's ability to conduct its nuclear-related activities.

QUESTIONS FROM SENATOR JOHNSTON

Question 7(a). How many contracts, subcontracts, and supply contracts would be affected if Price-Anderson is not renewed?

(b) --Would the Department be able to indemnify all of these contractors and vendors under the authority of Public Law 85-804?

Answer: (a) Attached is a list of DOE contractors who have a Price-Anderson clause in their contract, with the expiration date of each contract indicated. Since no DOE contract lasts more than 5 years, all 150 of these contracts will be affected on their expiration date if Price-Anderson indemnity authority expires and is not reauthorized before renewal of the contract.

Because of the unique umbrella coverage provided by the indemnity (in that claims against any subcontractor, vendor, or supplier are channeled to the prime contractor), DOE does not include an indemnity clause in any subcontract. The indemnity clause included in the prime contract protects any subcontractor or other persons who may be liable for a nuclear incident in connection with the activity covered by the prime contract. In

1985, we estimated that 60,000 subcontractors were protected by Price-Anderson. We believe that estimate remains about the same today.

Within the total of 150, DOE has executed 77 contracts with generators of spent nuclear fuel and high-level waste pursuant to the Nuclear Waste Policy Act. These contracts are included in the attached list although they do not contain an indemnity clause because they provide that the Department will include in its contract for the operation of any DOE spent fuel and high level waste facility an indemnity agreement based on the Price-Anderson Act. Such a contract would indemnify not only the operating contractor but any other person who may be liable for a nuclear incident arising out of, or in connection with, waste facility activities.

(b) Due to the need for a Secretarial determination that each indemnity provision entered into pursuant to Public Law No. 85-804 would facilitate the national defense, it is not likely that the Department would be able to indemnify under Public Law No. 85-804 all of the contractors,

subcontractors, and vendors now indemnified under Price-Anderson.

AWARDING OFFICE: CHICAGO OPERATIONS OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION / CICA FLAG / COMPETITIVE EXEMPTION	SUPP/SERV	CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
N-31109-ENG-38 CHICAGO UNIVERSITY OF ARGONNE NATIONAL LAB LEMONT IL 60439	01/01/1940 09/30/1988 M181 OPER OF GOVT FAC/R&D GOCO FACILITIES COST NO FEE PRE-CICA UNSOLICITED PROPOSAL	NO	NO	$5,000,000,000 $5,000,000,000 $0 $4,884,625,407 $250,845,322 $206,354,863	OPERATION OF ARGONNE NATIONA LABORATORY
N-7405-ENG-92 BATTELLE MEMORIAL INSTITUTE COMPUTER INFORMA & ED DEPT COLUMBUS OH 43201	04/16/1943 12/31/1990 AG90 R&D/OTHER ENERGY - OTHER COST PLUS FIXED FEE PRE-CICA UNSOLICITED PROPOSAL	NO	NO	$0 $0 $0 $0 $0 $0	PERFORMS MULTI-PROGRAM WORK R DOE PRIMARILY IN THE 04 PO OGRAM AND ALSO DOES WORK FOR OE'S CONTRACTORS
AC02-76CH00016 ASSOCIATED UNIVERSITIES INC BROOKHAVEN NY 11719	12/23/1947 12/31/1987 M131 OPER OF GOVT FAC/R&D GOCO FACILITIES COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO	NO	$3,600,000,000 $3,600,000,000 $0 $3,391,285,493 $236,188,840 $215,755,620	OPERATION OF BROOKHAVEN NATI AL LABORATORY
AC02-77ET37201 WESTINGHOUSE ELECTRIC CORP NUCLEAR COMPONENTS DIV TAMPA FL 33602	05/09/1977 06/30/1991 AG50 R&D/ENERGY - NUCLEAR - OTHER COST PLUS FIXED FEE PRE-CICA UNSOLICITED PROPOSAL	NO	NO	$57,807,000 $57,807,000 $0 $57,807,000 $2,987,000 $0	DOUBLE-WALLED TUBE STEAM GENE ATOR DEVELOPMENT
AC02-77ET37209 BABCOCK & WILCOX CO NUCLEAR EQUIPMENT DEPT BARBERTON OH 44203	03/14/1977 06/30/1987 AG53 R&D/ENERGY - NUCLEAR - AD DEV COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED COMPETITIVE	NO	NO	$50,772,877 $50,772,877 $0 $46,133,999 $1,011,000 $0	LARGE SCALE LMFBR STEAM GENER TOR DEVELOPMENT (DOUBLE WALL TUBE)

RPT-STANDARD1

RUN DATE: MAR 13, 1987

DOE PROCUREMENT AND ASSISTANCE DATA SYSTEM
ACTIVE AWARDS SUBJECT TO THE PRICE ANDERSON ACT
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7594MC.MK86180.DATA

PAGE NO.

AWARDING OFFICE: CHICAGO OPERATIONS OFFICE

AWARD BIN- - - AWARD DATE COMPL DATE RETIR DATE SUPP/SERV CONSULTANT CONTRACT VALUE DESCRIPTION OF WORK- - - - -
AWARDEE NAME - - - - - - - - - PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - GOVERNMENT SHAR --
AWARDEE DIVISION- - - - - - CFDA CODE AND DESCRIPTION- - - - - - - - - - - - - AWARDEE SHARE --
CITY - - - - - - - - - - - - - TYPE OF AWARD- - - - - - - - - - - - - - - TOT OBS TO DATE --
STATE ZIP CODE CICA FLAG EXTENT OF COMP OR SOLICITATION PROCEDURES PRIOR FY OBS --
OFFERS COMPETITIVE EXEMPTION - - - - METHOD OF SOLICITATION - - - - - - CURRENT FY OBS --

AWARDING OFFICE: ALBUQUERQUE OPERATIONS OFFICE

AWARD DIN- - - / AWARD DATE / COMPL DATE / RETIR DATE / SUPP/SERV / CONSULTANT / CONTRACT VALUE / DESCRIPTION OF WORK- - - -
AWARDEE NAME - - - - - - - - - - / PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - / GOVERNMENT SHAR / --
AWARDEE DIVISION- - - - - - / CFDA CODE AND DESCRIPTION- - - - - - - - - - - - - / AWARDEE SHARE / --
CITY - - - - - - - - - - - - / TYPE OF AWARD- - - - - - - - - - - - - - - / TOT OBS TO DATE / --
STATE / ZIP CODE / CICA FLAG / EXTENT OF COMP OR SOLICITATION PROCEDURES / PRIOR FY OBS / --
OFFERS / COMPETITIVE EXEMPTION - - - - / METHOD OF SOLICITATION - - - - - - / CURRENT FY OBS / --

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W-7405-ENG-36	01/01/1943	09/30/1987		NO	NO	$8,258,566,336	OPERATION OF THE LANL BRANCH
CALIFORNIA UNIVERSITY OF		M101	OPER OF GOVT FAC/R&D GOCO FACILITIES			$8,258,566,336	F THE UNIVERSITY OF CALIFORNI
						$0	, LOS ALAMOS
LOS ALAMOS		COST NO FEE				$8,258,566,336	
NM 87545	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$894,850,789	
						$735,555,889	

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AC04-76DP00053	01/01/1976	09/30/1988		NO	NO	$1,941,990,831	OPERATION OF GOVT FAC/PRODUCT
MONSANTO RESEARCH CORP		M101	OPER OF GOVT FAC/R&D GOCO FACILITIES			$1,941,990,831	ON BLDGS
MOUND FACILITY						$0	
MIAMISBURG		COST PLUS AWARD FEE				$1,941,990,831	
OH 45342	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$192,751,652	
						$167,327,218	

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AC04-76DP00487	01/01/1976	09/30/1991		NO	NO	$2,678,563,816	OPERATION OF GOVT FAC/PRODUCT
MASON & HANGER-SILAS MASON		M101	OPER OF GOVT FAC/R&D GOCO FACILITIES			$2,678,563,816	ON BLDGS
						$0	
AMARILLO		COST PLUS AWARD FEE				$1,431,622,874	
TX 79120	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$146,922,985	
						$126,859,860	

- - - - - - - - - - - - - - -

AC04-76DP00613	01/01/1976	03/31/1987		NO	NO	$6,652,035,811	OPERATION OF GOVT FAC/PRODUCT
ALLIED CORP		M101	OPER OF GOVT FAC/R&D GOCO FACILITIES			$6,652,035,811	ON BLDGS
BENDIX KANSAS CITY DIV						$0	
KANSAS CITY		COST PLUS AWARD FEE				$6,652,035,811	
MO 64141	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$590,470,577	
						$461,795,096	

- - - - - - - - - - - - - - -

AC04-76DP00656	01/01/1976	09/30/1988		NO	NO	$1,319,162,535	OPERATION OF PINELLAS PLANT
GENERAL ELECTRIC CO		M153	OPER OF GOVT FAC/PRODUCTION BLDGS			$1,319,162,535	
OFFICE OF CONTRACTS & GRANT						$0	
SAINT PETERSBURG		COST PLUS AWARD FEE				$1,319,162,535	
FL 33543	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$128,048,571	
						$117,353,075	

RPT-STANDARD1

RUN DATE: MAR 13, 1987

DOE PROCUREMENT AND ASSISTANCE DATA SYSTEM
ACTIVE AWARDS SUBJECT TO THE PROVISIONS OF OMB CIRCULAR A-102
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7596MC.MK86100.DATA

AWARDING OFFICE: ALBUQUERQUE OPERATIONS OFFICE

AWARD DTN- - - AWARD DATE COMPL DATE RETIR DATE SUPP/SERV CONSULTANT CONTRACT VALUE DESCRIPTION OF WORK- - - -
AWARDEE NAME - - - - - - - - - PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - - GOVERNMENT SHARE --
AWARDEE DIVISION- - - - - - CFDA CODE AND DESCRIPTION- - - - - - - - - - - - CHARGES SHARE --
CITY - - - - - - - - - - - - - - TYPE OF AWARD- - - - - - - - - - - - - TOT COS TO DATE --
- - TC ZIP CODE CICA FLAG EXTENT OF COMP OR SOLICITATION PROCEDURES PRICE BY DOE --
OFFERS COMPETITIVE EXEMPTION - - - - METHOD OF SOLICITATION - - - - - - CURRENT FY DOE --

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AC04-76DP00789 01/01/1976 09/30/1988 NO NO $13,101,896,845
AT&T TECHNOLOGIES INC M181 OPER OF GOVT FAC/R&D GOCO FACILITIES $13,101,896,845 OPERATION OF SANDIA NATIONAL
SANDIA CORP $0 LABORATORIES
ALBUQUERQUE COST NO FEE $13,101,896,845
NM 87161 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE $1,071,029,869
$906,058,329

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AC04-76DP03276 01/01/1976 02/28/1989 NO NO $66,124,891
ROSS AVIATION V211 AIR PASSENGER SERVICE $66,124,891 AIR TRANSPORTATION AND RELATED
$0 SERVICES
ALBUQUERQUE COST PLUS FIXED FEE $66,124,891
NM 87123 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE $8,611,693
$5,343,440

- - - - - - - - - - - - - - -

AC04-76DP03535 01/01/1976 12/31/1988 NO NO $3,650,313,[illegible]
ROCKWELL INTERNATIONAL CORP M153 OPER OF GOVT FAC/PRODUCTION BLDGS $3,650,313,[illegible] OPERATION OF ROCKY FLATS PLAN
$0
GOLDEN COST PLUS AWARD FEE $3,650,313,139
CO 80401 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE $695,669,942
$503,995,039

AC04-86AL31950 10/24/1985 09/30/1990 NO NO $78,819,703
WESTINGHOUSE ELECTRIC CORP M181 OPER OF GOVT FAC/R&D GOCO FACILITIES $78,819,703 WIPP MANAGEMENT AND OPERATION
WASTE ISOLATION DIV $0
CARLSBAD COST PLUS AWARD FEE $70,819,703
NM 88221 PRE-CICA OTHER NEGOTIATED COMPETITIVE $60,614,147
$10,205,556

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AWARDING OFFICE: IDAHO OPERATIONS OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / SUPP/SERV / CONSULTANT / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION / CICA FLAG / COMPETITIVE EXEMPTION	CONTRACT VALUE / GOVERNMENT SHAR / ANARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
C07-76ID01570 EG & G IDAHO INC IDAHO FALLS ID 83401 - - - - - - - - - - - - - -	07/01/1976 09/30/1991 NO NO M181 OPER OF GOVT FAC/R&D GOCO FACILITIES COST PLUS AWARD FEE OTHER NEGOTIATED COMPETITIVE PRE-CICA	$2,489,562,644 $2,489,562,644 $0 $2,483,956,658 $303,896,529 $203,460,340	PRIME OPERATING CONTRACTOR FOR THE INEL
C07-84ID12435 WESTINGHOUSE IDAHO NUCLEAR CO IDAHO FALLS ID 83401 - - - - - - - - - - - - - -	03/05/1984 09/30/1989 NO NO M181 OPER OF GOVT FAC/R&D GOCO FACILITIES COST PLUS AWARD FEE OTHER NEGOTIATED COMPETITIVE PRE-CICA	$368,993,101 $368,993,101 $0 $368,993,101 $76,699,167 $107,067,051	MANAGEMENT OPERATION AND MAINTENANCE OF ICPP
C07-87ID12600 ROCKWELL INTERNATIONAL CORP ROCKETDYNE DIV IDAHO FALLS ID 83403 MORE - - - - - - - - - - - - - -	12/29/1986 09/30/1991 NO NO M181 OPER OF GOVT FAC/R&D GOCO FACILITIES COST PLUS FIXED FEE NORMAL FULL & OPEN COMPETITION COMPETITIVE PROPOSAL POST-CICA	$300,000,000 $300,000,000 $0 $13,725,358 $0 $13,725,358	MANAGEMENT & OPERATION OF SPECIFIC MANUFACTURING CAPABILITY PLANT
C07-81NE44139 WEST VALLEY NUCLEAR SERVICES PITTSBURGH PA 15236 - - - - - - - - - - - - - -	08/24/1981 03/31/1987 NO NO M181 OPER OF GOVT FAC/R&D GOCO FACILITIES COST PLUS AWARD FEE OTHER NEGOTIATED COMPETITIVE PRE-CICA	$234,251,413 $234,251,413 $0 $233,771,842 $58,311,800 $72,768,811	PRIME OPERATING CONTRACTOR FOR THE WEST VALLEY PROJECT

RPT-STANDARD1

RUN DATE: MAR 15, 1987

DOE PROCUREMENT AND ASSISTANCE DATA SYSTEM
ACTIVE AWARDS SUBJECT TO THE PRICE ANDERSON ACT
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7594NC.MK86180.DATA

AWARDING OFFICE: NEVADA OPERATIONS OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / SUPP/SERV / CONSULTANT / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / CICA FLAG / EXTENT OF COMP OR SOLICITATION PROCEDURES / COMPETITIVE EXEMPTION / METHOD OF SOLICITATION	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
AC08-82NV10250 WESTINGHOUSE ELECTRIC CORP ADVANCED ENERGY SYSTEMS DIV LAS VEGAS NV 89101 - - - - - - - - - - - - - - -	10/01/1981 06/30/1987 NO NO AG51 R&D/ENERGY - NUCLEAR - RESCH COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	$14,532,541 $14,532,541 $0 $13,448,541 $2,453,540 $539,836	COMMERCIAL NUCLEAR WASTE RESEARCH AND DEVELOPMENT PROGRAM - E-MAD BUILDING, NEVADA TEST SITE.
AC08-83NV10282 EG & G ENERGY MEASUREMENTS INC LAS VEGAS NV 89125 - - - - - - - - - - - - - - -	12/30/1982 12/31/1987 NO NO AC51 R&D/WEAPONS - RESCH COST PLUS AWARD FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	$358,475,000 $358,475,000 $0 $766,734,000 $170,374,000 $140,000,000	TIMING AND FIRING, PHOTOGRAPH, ELECTRONIC SUPPORT, AND RELATED SCIENTIFIC OPERATIONS.

AWARDING OFFICE: SAVANNAH RIVER OPERATIONS OFFICE

IARD DIN- - -	AWARD DATE	COMPL DATE	RETIR DATE	SUPP/SERV	CONSULTANT	CONTRACT VALUE	DESCRIPTION OF WORK- - - - - -
NARDEE NAME - - - - - - - - - -	PRODUCT/SERVICE CODE AND DESCRIPTION - - - - -					GOVERNMENT SHAR	--
AWARDEE DIVISION- - - - - - -	CFDA CODE AND DESCRIPTION- - - - - - - - - - - -					AWARDEE SHARE	--
CITY - - - - - - - - - - - - -	TYPE OF AWARD- - - - - - - - - - - - - - -					TOT OBS TO DATE	--
STATE ZIP CODE	CICA FLAG	EXTENT OF COMP OR SOLICITATION PROCEDURES				PRIOR FY OBS	--
OFFERS	COMPETITIVE EXEMPTION - - - -	METHOD OF SOLICITATION - - - - - -				CURRENT FY OBS	--
09-76SR00001	09/30/1953	09/30/1989		NO	NO	$11,707,044,809	OPERATION AND CONSTRUTION OF S
I DUPONT DENEMOURS & CO		M181 OPER OF GOVT FAC/R&D GOCO FACILITIES				$11,707,044,809	RP
						$0	
AIKEN		COST PLUS FIXED FEE				$10,207,044,809	
SC	29801	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE			$1,090,428,905	
						$943,391,437	

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REPORT TOTALS:

TOTAL COUNT FOR REPORT	20
SUM OF TOTAL CONTRACT VALUES FOR REPORT	$61,548,097,797
SUM OF GOVERNMENT SHARES FOR REPORT	$61,548,097,797
SUM OF AWARDEE SHARES FOR REPORT	$0
SUM OF TOTAL OBLIGATIONS TO DATE FOR REPORT	$50,227,209,430
SUM OF PRIOR FISCAL YEAR OBLIGATIONS FOR REPORT	$5,667,751,901
SUM OF CURRENT FISCAL YEAR OBLIGATIONS FOR REPORT	$4,809,264,362

AWARDING OFFICE: SAN FRANCISCO OPERATIONS OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / EXTENT OF COMP OR SOLICITATION PROCEDURES / CICA FLAG / COMPETITIVE EXEMPTION / METHOD OF SOLICITATION	SUPP/SERV	CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
-7405-ENG-48 CALIFORNIA UNIVERSITY OF LAWRENCE BERKELEY LAB BERKELEY CA 94720	01/01/1940 09/30/1987 M181 OPER OF GOVT FAC/R&D GOCO FACILITIES COST NO FEE PRE-CICA	NO	NO	$10,751,942,960 $10,751,942,960 $0 $10,734,094,675 $977,110,064 $659,120,850	OPERATION OF LAWRENCE BERKELEY AND LAWRENCE LIVERMORE LABO RATORIES
- - - - - - - - - - - - - - -					
A03-84SF00100 GA TECHNOLOGIES INC SAN DIEGO CA 92138	09/27/1984 09/30/1989 COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO	NO	$0 $0 $0 $0 $0 $0	MASTER CONTRACT FOR GA TECHNOL OGIES INC
- - - - - - - - - - - - - - -					
A03-84SF00101 GENERAL ELECTRIC CO ADVANCED NUCLEAR TECHNOL OR SUNNYVALE CA 94088	09/27/1984 09/30/1989 COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO	NO	$0 $0 $0 $0 $0 $0	MASTER CONTRACT - GENERAL ELEC TRIC COMPANY
- - - - - - - - - - - - - - -					
A03-84SF00102 ROCKWELL INTERNATIONAL CORP ROCKETDYNE DIV CANOGA PARK CA 91304	09/27/1984 09/30/1989 COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO	NO	$0 $0 $0 $0 $0 $0	MASTER CONTRACT - ROCKWELL INT ERNATIONAL CORP
- - - - - - - - - - - - - - -					
A03-84SF11962 GENERAL ATOMIC CO SAN DIEGO CA 92138	11/02/1983 09/29/1987 AG51 R&D/ENERGY - NUCLEAR - RESCH COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO	NO	$32,131,332 $32,131,332 $0 $26,392,237 $4,929,573 $1,940,000	HIGH TEMPERATURE GAS REACTOR T ECHNOLOGY PROGRAM AM0376SF00167

AWARDING OFFICE: SAN FRANCISCO OPERATIONS OFFICE

WARD DIN- - - AWARD DATE	COMPL DATE	RETIR DATE	SUPP/SERV	CONSULTANT	CONTRACT VALUE	DESCRIPTION OF WORK- - - - - -
WARDEE NAME - - - - - - - - -	PRODUCT/SERVICE CODE AND DESCRIPTION - - - - -				GOVERNMENT SHAR	--
AWARDEE DIVISION- - - - - -	CFDA CODE AND DESCRIPTION- - - - - - - - - - - -				AWARDEE SHARE	--
CITY - - - - - - - - - - - - -	TYPE OF AWARD- - - - - - - - - - - - -				TOT OBS TO DATE	--
STATE ZIP CODE CICA FLAG	EXTENT OF COMP OR SOLICITATION PROCEDURES				PRIOR FY OBS	--
OFFERS COMPETITIVE EXEMPTION - - - -	METHOD OF SOLICITATION - - - - - -				CURRENT FY OBS	--
03-77ET33006 01/01/1977	11/30/1987		NO	NO	$162,232,922	INCREMENTAL FUNDING
RW INC	AG53 R&D/ENERGY - NUCLEAR - AD DEV				$162,232,922	
					$0	
REDONDO BEACH	COST PLUS FIXED FEE				$151,580,092	
CA 90278 PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$20,700,900	
					$3,835,000	
- - - - - - - - - - - - - -						
03-80ET34036 04/24/1980	09/30/1987		NO	NO	$25,839,094	HIGH TEMPERATURE REACTOR (HTR)
ENERAL ELECTRIC CO	AG53 R&D/ENERGY - NUCLEAR - AD DEV				$25,839,094	PROGRAM
ADVANCED REACTOR SYSTEMS D*					$0	
SUNNYVALE	COST PLUS FIXED FEE				$23,308,782	
CA 94086 PRE-CICA	ONE ACCEPTABLE OFFER FOLLOWING COMPET.				$2,875,507	
					$1,000,000	AM0376SF00893
- - - - - - - - - - - - - -						

AWARDING OFFICE: OAK RIDGE OPERATIONS OFFICE

AWARD DOC- - - AWARD DATE	COMPL DATE	RETIR DATE	SUPP/SERV	CONSULTANT	CONTRACT VALUE	DESCRIPTION OF WORK- - - - -
AWARDEE NAME - - - - - - - - - PRODUCT/SERVICE CODE AND DESCRIPTION - - - - -					GOVERNMENT SHAR	--
AWARDEE DIVISION- - - - - - CFDA CODE AND DESCRIPTION- - - - - - - - - - - -					AWARDEE SHARE	--
CITY - - - - - - - - - - - - - - TYPE OF AWARD- - - - - - - - - - - - - -					TOT OBS TO DATE	--
STATE ZIP CODE CICA FLAG EXTENT OF COMP OR SOLICITATION PROCEDURES					PRIOR FY OBS	--
OFFERS COMPETITIVE EXEMPTION - - - - METHOD OF SOLICITATION - - - - - - -					CURRENT FY OBS	--
AC05-76OR00001 01/01/1976 09/30/1987			NO	NO	$1,960,209,611	MANAGE, OPERATE AND MAINTAIN
MARTIN MARIETTA ENERGY SYSTEMS M181 OPER OF GOVT FAC/R&D GOCO FACILITIES					$1,960,209,611	ORA FACILITIES NEAR PORTSI
					$0	UTH, OHIO.
PIKETON COST PLUS AWARD FEE					$1,960,209,611	
OH 45661 PRE-CICA OTHER NEGOTIATED COMPETITIVE					$100,066,335	BASE
					$52,605,031	
AC05-84OR21400 12/24/1985 09/30/1991			NO	NO	$313,091,175	MANAGEMENT, OPERATION AND MAIN
WESTINGHOUSE MATERIALS CO M153 OPER OF GOVT FAC/PRODUCTION BLDGS					$313,091,175	TENANCE OF THE FEED MATERIALS
					$0	PRODUCTION CENTER (FMPC) AT FE
FERNALD COST PLUS AWARD FEE					$313,091,175	RNALD, OHIO
OH 45030 POST-CICA NORMAL FULL & OPEN COMPETITION					$154,812,661	
MORE COMPETITIVE PROPOSAL					$150,278,514	
- - - - - - - - - - - - - - -						
AC05-76OR01405 01/01/1976 09/30/1987			NO	NO	$89,671,986	EXTRUSION OF FUEL ELEMENTS AT
RMI CO M181 OPER OF GOVT FAC/R&D GOCO FACILITIES					$89,671,986	
					$0	LOPMENT MO RK
ASHTABULA COST PLUS FIXED FEE					$89,511,986	
OH 44004 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE					$9,093,602	TIVE
					$10,602,000	
- - - - - - - - - - - - - - -						
AC05-76OR01633 01/01/1976 09/30/1988			NO	NO	$53,220,653	MANAGE, OPERATE, AND MAINTAIN
PUERTO RICO UNIVERSITY OF M181 OPER OF GOVT FAC/R&D GOCO FACILITIES					$53,220,653	DOE NUCLEAR TRAINING AND
					$0	RESEARCH CENTER AT THE RIO PI
SAN JUAN COST PLUS FIXED FEE					$53,220,653	DRAS AND MAYAGUEZ CAMPUSE
00000 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE					$329,000	
					$235,000	
- - - - - - - - - - - - - - -						
AC05-76OR05647 08/10/1978 12/31/1988			NO	NO	$1,401,393,452	CONSTRUCTION MANAGEMENT/CONTT
STONE & WEBSTER ENG CORP R214 A/E - MANAGEMENT ENGINEERING					$1,401,393,452	CTOR SERVICES FOR
					$0	CONSTRUCTION OF GAS CENTRIFUG
PIKETON COST PLUS AWARD FEE					$591,995,328	ENRICHMENT PLANT.
OH 45661 PRE-CICA OTHER NEGOTIATED COMPETITIVE					$0	
					$0	

AWARDING OFFICE: OAK RIDGE OPERATIONS OFFICE

AWARD DIN- - -	AWARD DATE	COMPL DATE	RETIR DATE	SUPP/SERV	CONSULTANT	CONTRACT VALUE	DESCRIPTION OF WORK- - - - -
AWARDEE NAME - - - - - - - - -	PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - -					GOVERNMENT SHAR	--
AWARDEE DIVISION- - - - - -	CFDA CODE AND DESCRIPTION- - - - - - - - - - - -					AWARDEE SHARE	--
CITY - - - - - - - - - - - - -	TYPE OF AWARD- - - - - - - - - - - - - - -					TOT OBS TO DATE	--
STATE	ZIP CODE	CICA FLAG	EXTENT OF COMP OR SOLICITATION PROCEDURES			PRIOR FY OBS	--
OFFERS	COMPETITIVE EXEMPTION - - - -		METHOD OF SOLICITATION - - - - - -			CURRENT FY OBS	--
AC05-840R21400	03/30/1984	09/30/1989		NO	NO	$4,272,794,921	CONTRACT FOR OPERATION OF OR
MARTIN MARIETTA ENERGY SYSTEMS		M181	OPER OF GOVT FAC/R&D GOCO FACILITIES			$4,272,794,921	, Y-12, ORGDP, AND PGDP
						$0	
OAK RIDGE			COST PLUS AWARD FEE			$4,272,794,921	
TN	37830	PRE-CICA	OTHER NEGOTIATED COMPETITIVE			$822,410,775	
						$678,417,612	

- - - - - - - - - - - - - - -

AWARDING OFFICE: RICHLAND OPERATIONS OFFICE

AWD DIN- - - AWARD DATE	COMP. DATE	RETIR DATE	SUPP/SERV	CONSULTANT	CONTRACT VALUE	DESCRIPTION OF WORK- - - - - -
AWARDEE NAME - - - - - - - - -	PRODUCT/SERVICE CODE AND DESCRIPTION - - - - -				GOVERNMENT SHAR	--
AWARDEE DIVISION- - - - - -	CFDA CODE AND DESCRIPTION- - - - - - - - - - - -				AWARDEE SHARE	--
CITY - - - - - - - - - - - - -	TYPE OF AWARD- - - - - - - - - - - - -				TOT OBS TO DATE	--
STATE ZIP CODE CICA FLAG	EXTENT OF COMP OR SOLICITATION PROCEDURES				PRIOR FY OBS	--
OFFERS COMPETITIVE EXEMPTION - - - -	METHOD OF SOLICITATION - - - - - -				CURRENT FY OBS	--
06-77RL01030 05/23/1980	09/30/1987		NO	NO	$5,137,260,237	SUPPORT SERVICE FOR HANFORD SI
OCKWELL HANFORD OPERATIONS	M181 OPER OF GOVT FAC/R&D GOCO FACILITIES				$5,137,260,237	TE
					$0	
RICHLAND	COST PLUS AWARD FEE				$2,789,261,111	
WA 99352 PRE-CICA	OTHER NEGOTIATED COMPETITIVE				$410,779,040	
					$382,061,922	
- - - - - - - - - - - - -						
06-76RL01857 09/10/1965	12/31/1988		NO	NO	$1,748,326,298	MANAGEMENT AND OPERATION OF N
NC NUCLEAR INDUSTRIES	M181 OPER OF GOVT FAC/R&D GOCO FACILITIES				$1,748,326,298	REACTOR
					$0	
RICHLAND	COST PLUS FIXED FEE				$1,748,326,298	
WA 99352 PRE-CICA	OTHER NEGOTIATED COMPETITIVE				$244,573,670	
					$194,399,678	
- - - - - - - - - - - - -						
06-76FF02170 05/22/1970	09/30/1987		NO	NO	$5,310,165,883	OPERATION OF THE HANFORD ENGIN
ESTINGHOUSE HANFORD CO	M181 OPER OF GOVT FAC/R&D GOCO FACILITIES				$5,310,165,883	EERING DEVELOPMENT
HANFORD ENGINEERING DEV LAB					$0	LABORATORY
RICHLAND	COST PLUS AWARD FEE				$2,714,101,118	
WA 99352 PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE				$120,304,593	
					$94,563,087	
- - - - - - - - - - - - -						
06-76RL02320 10/21/1975	09/30/1987		YES	NO	$46,282,547	ONSITE COMPUTER SERVICES
OEING COMPUTER SERVICES	R301 ADP FACILITY MANAGEMENT SERVICES				$46,282,547	
					$0	
RICHLAND	COST PLUS AWARD FEE				$46,282,547	
WA 99352 PRE-CICA	OTHER NEGOTIATED COMPETITIVE				$140,199-	
					$1,460,000	
- - - - - - - - - - - - -						

AWARDING OFFICE: CLINCH RIVER BREEDER REACTOR PROJ

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / SUPP/SERV / CONSULTANT PRODUCT/SERVICE CODE AND DESCRIPTION CFDA CODE AND DESCRIPTION TYPE OF AWARD / CICA FLAG / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
AC15-76CL10012 STONE & WEBSTER ENG CORP OAK RIDGE TN 37830	05/04/1976 01/31/1988 NO NO Y159 CONSTRUCTION/OTHER INDUSTRIAL BUILDINGS COST PLUS AWARD FEE PRE-CICA OTHER NEGOTIATED COMPETITIVE	$89,357,000 $89,357,000 $0 $89,357,000 $0 $0	CONSTRUCTION OF CRBRP INTEGRATED ELECTRIC POWER PLANT AT OAK RIDGE, TN
AC15-76CL50003 WESTINGHOUSE ELECTRIC CORP MADISON PA 15663	11/14/1973 01/31/1988 11/30/1936 NO NO 4410 INDUSTRIAL BOILERS COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED COMPETITIVE	$671,112,908 $671,112,908 $0 $671,112,908 $3,993,083- $5,636,488-	DESIGN, MANUFACTURE, FURNISH AND TEST THE NUCLEAR STEAM SUPPLY SYSTEM
AC15-76CL92004 BURNS & ROE INC ORADELL NJ 07649	01/25/1974 01/31/1988 06/12/1986 NO NO R219 OTHER ARCHITECTS & ENGINEERING - GENERAL COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED COMPETITIVE	$236,782,590 $236,782,590 $0 $236,782,590 $1,341,410- $0	PROVIDES THE PROFESSIONAL ARCHITECH ENGINEER SERVICES REQUIRED FOR THE LMFBR PLANT

REPORT TOTALS:

TOTAL COUNT FOR REPORT	20
SUM OF TOTAL CONTRACT VALUES FOR REPORT	$32,857,059,614
SUM OF GOVERNMENT SHARES FOR REPORT	$32,857,059,614
SUM OF AWARDEE SHARES FOR REPORT	$0
SUM OF TOTAL OBLIGATIONS TO DATE FOR REPORT	$27,054,674,577
SUM OF PRIOR FISCAL YEAR OBLIGATIONS FOR REPORT	$2,685,818,194
SUM OF CURRENT FISCAL YEAR OBLIGATIONS FOR REPORT	$2,075,203,692

RPT-STANDARD1 DOE PROCUREMENT AND ASSISTANCE DATA SYSTEM PAGE NO.

RUN DATE: MAR 13, 1987 ACTIVE AWARDS SUBJECT TO THE PRICE ANDERSON ACT
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - 07594MC.MK86180.DATA

AWARDING OFFICE: PITTSBURGH NAVAL REACTORS OFFICE

AWARD BIN- - - AWARD DATE COMPL DATE RETIR DATE SUPP/SERV CONSULTANT / AWARDEE NAME - - - - - - - - - - PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - / AWARDEE DIVISION- - - - - - CFDA CODE AND DESCRIPTION- - - - - - - - - - - - / CITY - - - - - - - - - - - - - TYPE OF AWARD- - - - - - - - - - - - - - / STATE ZIP CODE CICA FLAG EXTENT OF COMP OR SOLICITATION PROCEDURES / OFFERS COMPETITIVE EXEMPTION - - - - METHOD OF SOLICITATION - - - - - -	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK- - - - - / -- / -- / -- / -- / --
AC11-76PN00014 07/15/1949 09/30/1988 NO NO WESTINGHOUSE ELECTRIC CORP M181 OPER OF GOVT FAC/R&D GOCO FACILITIES BETTIS ATOMIC POWER LAB WEST MIFFLIN COST PLUS FIXED FEE PA 15122 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	$3,885,844,132 $3,885,844,132 $0 $3,882,214,132 $224,145,002 $226,141,000	OPERATE BETTIS ATOMIC POWER L BORATORY [illegible] NAVAL REACTORS FA LITY, & PROVIDE RELATED SERV ES FOR NAVAL VESSEL NUCLEAR P WER SYSTEMS.
AC11-76PN00155 10/26/1971 09/30/1987 NO NO BABCOCK & WILCOX CO 4470 NUCLEAR REACTORS NAVAL NUCLEAR FUEL DIV LYNCHBURG FIXED PRICE INCENTIVE VA 24505 PRE-CICA OTHER NEGOTIATED COMPETITIVE	$158,951,553 $158,951,553 $0 $158,951,553 $32,050 $0	FABRICATE NAVAL REACTOR CORE.
AC11-76PN00157 05/29/1974 10/31/1989 NO NO BABCOCK & WILCOX CO AD90 R&D/OTHER DEFENSE - OTHER NAVAL NUCLEAR FUEL DIV LYNCHBURG FIXED PRICE INCENTIVE VA 24505 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	$340,061,607 $340,061,607 $0 $340,061,607 $7,500,265 $362,311	FABRICATE NAVAL REACTOR CORE:
AC11-76PN00158 11/08/1974 06/30/1987 NO NO BABCOCK & WILCOX CO AD90 R&D/OTHER DEFENSE - OTHER NAVAL NUCLEAR FUEL DIV LYNCHBURG FIXED PRICE INCENTIVE VA 24505 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	$171,320,815 $171,320,815 $0 $171,320,814 $11,571- $0	FABRICATE NAVAL REACTOR CORE:
AC11-76PN00159 06/30/1975 06/30/1987 NO NO BABCOCK & WILCOX CO AD90 R&D/OTHER DEFENSE - OTHER NAVAL NUCLEAR FUEL DIV LYNCHBURG FIXED PRICE INCENTIVE VA 24505 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	$12,144,955 $12,144,955 $0 $12,144,955 $199,775 $0	FABRICATE NAVAL REACTOR CORES

AWARDING OFFICE: PITTSBURGH NAVAL REACTORS OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION / CICA FLAG / COMPETITIVE EXEMPTION	SUPP/SERV	CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
AC11-79PN38163 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	01/12/1979 06/30/1987 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	ND	NO	$25,124,826 $25,124,826 $0 $25,124,826 $0 $0	FABRICATE NAVAL REACTOR CORES
AC11-81PN38166 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	04/21/1981 06/30/1987 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	ND	NO	$36,489,906 $36,489,906 $0 $36,489,906 $0 $0	FABRICATE NAVAL REACTOR CORE
AC11-82PN38167 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	05/21/1982 12/31/1990 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	ND	NO	$61,658,809 $61,658,809 $0 $61,658,809 $0 $0	FABRICATE NAVAL REACTOR CORES
AC11-83PN38168 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	05/24/1983 06/29/1990 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	ND	NO	$217,992,750 $217,992,750 $0 $217,992,750 $745,500 $409,000	FABRICATE NAVAL REACTOR CORES
AC11-84PN38169 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	06/15/1984 06/30/1990 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	ND	NO	$149,495,397 $149,495,397 $0 $136,094,997 $62,848,892 $24,938,062	FABRICATE NAVAL REACTOR CORES

RPT-STANDARD1

RUN DATE: MAR 13, 1987

DOE PROCUREMENT AND ASSISTANCE DATA SYSTEM
ACTIVE AWARDS SUBJECT TO THE PRICE ANDERSON ACT
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7594MC.MK86180.DATA

PAGE NO.

AWARDING OFFICE: PITTSBURGH NAVAL REACTORS OFFICE

AWARD DIN- - - AWARD DATE COMPL DATE RETIR DATE SUPP/SERV CONSULTANT CONTRACT VALUE DESCRIPTION OF WORK- - - - - -
AWARDEE NAME - - - - - - - - - - PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - GOVERNMENT SHAR -- --
AWARDEE DIVISION- - - - - - CFDA CODE AND DESCRIPTION- - - - - - - - - - - - AWARDEE SHARE -- --
CITY - - - - - - - - - - - - - - TYPE OF AWARD- - - - - - - - - - - - - - - TOT OBS TO DATE -- --
STATE ZIP CODE CICA FLAG EXTENT OF COMP OR SOLICITATION PROCEDURES PRIOR FY OBS -- --
OFFERS COMPETITIVE EXEMPTION - - - - METHOD OF SOLICITATION - - - - - - CURRENT FY OBS -- --

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AC11-84PN38170 04/24/1984 12/30/1988 NO NO $26,197,934 FABRICATE NAVAL REACTOR CORES
BABCOCK & WILCOX CO 4470 NUCLEAR REACTORS $26,197,934
$0
LYNCHBURG FIXED PRICE INCENTIVE $26,197,934
VA 24505 PRE-CICA ONE ACCEPTABLE OFFER FOLLOWING COMPET. $585,100
$0

- - - - - - - - - - - - - - - -

AC11-84PN38171 07/31/1984 12/31/1988 NO NO $12,822,946 FABRICATE NAVAL REACTOR CORES
BABCOCK & WILCOX CO 4470 NUCLEAR REACTORS $12,822,946
NAVAL NUCLEAR FUEL DIV $0
LYNCHBURG FIXED PRICE INCENTIVE $12,822,946
VA 24505 PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE $124,200-
$9,300

- - - - - - - - - - - - - - - -

RPT-STANDARD1 DOE PROCUREMENT AND ASSISTANCE DATA SYSTEM PAGE NO.
ACTIVE AWARDS SUBJECT TO THE PRICE ANDERSON ACT
RUN DATE: MAR 13, 1987 ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7594MC.MK86180.DATA

AWARDING OFFICE: SCHENECTADY NAVAL REACTORS OFFICE

AWARD BIN- - - / AWARDEE NAME - - - / AWARDEE DIVISION- - - / CITY - - - / STATE / OFFERS	AWARD DATE / ZIP CODE / COMPETITIVE EXEMPTION	COMPL DATE / CICA FLAG	RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION	SUPP/SERV	CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK- - - / -- / -- / -- / -- / --
AC12-76SN00052	05/15/1946	09/30/1990		NO	NO	$3,123,242,708	OPERATE AND MAINTAIN GOVERN
GENERAL ELECTRIC CO		M181	OPER OF GOVT FAC/R&D GOCO FACILITIES			$3,123,242,708	T-OWNED LABORATORY AND COND
KNOLLS ATOMIC POWER LAB						$0	FUNDAMENTAL & APPLIED RESEA
SCHENECTADY			COST PLUS FIXED FEE			$3,123,242,708	ON EQUIPMENT PERTAINING TO
NY	12305	PRE-CICA	OTHER NEGOTIATED NON-COMPETITIVE			$206,825,926	E OF ATOMIC ENERGY
						$207,275,400	
AC12-76SN00564	03/23/1976	05/31/1992		NO	NO	$303,101,476	FABRICATE NAVAL REACTOR COR
UNC RESOURCES INC		4470	NUCLEAR REACTORS			$303,101,476	
UNC NAVAL PRODUCTS DIV						$0	
UNCASVILLE			FIXED PRICE INCENTIVE			$302,933,576	
CT	06382	PRE-CICA	OTHER NEGOTIATED COMPETITIVE			$1,203,756	
						$1,071,800	
AC12-78SN00566	04/20/1978	06/30/1987		NO	NO	$26,490,129	FABRICATE NAVAL REACTOR COR
BABCOCK & WILCOX CO		4470	NUCLEAR REACTORS			$26,490,129	
NAVAL NUCLEAR FUEL DIV						$0	
LYNCHBURG			FIXED PRICE INCENTIVE			$26,490,129	
VA	24505	PRE-CICA	OTHER NEGOTIATED COMPETITIVE			$2,027,760	
						$0	
AC12-79SN00567	01/16/1979	06/01/1988		NO	NO	$66,088,290	FABRICATE NAVAL REACTOR COR
BABCOCK & WILCOX CO		4470	NUCLEAR REACTORS			$66,088,290	
NAVAL NUCLEAR FUEL DIV						$0	
LYNCHBURG			FIXED PRICE INCENTIVE			$66,088,290	
VA	24505	PRE-CICA	OTHER NEGOTIATED COMPETITIVE			$340,500	
						$18,000-	
AC12-76SN10559	10/10/1973	02/22/1991		NO	NO	$162,842,708	FABRICATE NAVAL REACTOR COR
UNC RESOURCES INC		4470	NUCLEAR REACTORS			$162,842,708	
UNC NAVAL PRODUCTS DIV						$0	
UNCASVILLE			FIXED PRICE INCENTIVE			$162,842,708	
CT	06382	PRE-CICA	OTHER NEGOTIATED COMPETITIVE			$444,357-	
						$0	

AWARDING OFFICE: SCHENECTADY NAVAL REACTORS OFFICE

AWARD DIN- - - AWARD DATE / AWARDEE NAME - - - - - - - - / AWARDEE DIVISION- - - - - - / CITY - - - - - - - - - - / STATE ZIP CODE CICA FLAG / OFFERS COMPETITIVE EXEMPTION - - - -	COMPL DATE RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - / CFDA CODE AND DESCRIPTION- - - - - - - - - - - / TYPE OF AWARD- - - - - - - - - - - - - / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION - - - - - -	SUPP/SERV CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / ANARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK- - - - - -
C12-79SN39001 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	06/04/1979 06/30/1988 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED COMPETITIVE	NO NO	$78,235,330 $78,235,330 $0 $78,235,330 $99,903- $0	FABRICATE NAVAL REACTOR CORES
- - - - - - - - - - - - - -				
C12-81SN39009 UNC RESOURCES INC UNC NAVAL PRODUCTS DIV UNCASVILLE CT 06382 PRE-CICA	04/21/1981 11/30/1990 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$251,945,599 $251,945,599 $0 $251,945,599 $330,916 $698,400	FABRICATE NAVAL REACTOR CORES
- - - - - - - - - - - - - -				
C12-81SN39010 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	06/30/1981 04/30/1989 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$81,874,821 $81,874,821 $0 $81,874,821 $4,963,000 $6,153,500	FABRICATE NAVAL REACTOR CORES
- - - - - - - - - - - - - -				
C12-81SN39015 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	06/26/1981 11/30/1987 4470 NUCLEAR REACTORS COST PLUS FIXED FEE OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$24,995,900 $24,995,900 $0 $24,995,900 $7,047,400 $0	CORE-DEVELOPMENT AND PREPRODUC TION WORK
- - - - - - - - - - - - - -				
C12-82SN39020 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	04/06/1982 03/31/1988 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$61,529,076 $61,529,076 $0 $61,529,076 $0 $0	FABRICATE NAVAL REACTOR CORES

AWARDING OFFICE: SCHENECTADY NAVAL REACTORS OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / CICA FLAG / COMPETITIVE EXEMPTION	SUPP/SERV / CONSULTANT / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
AC12-82SN39023 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505	04/01/1982 03/01/1988 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$40,969,885 $40,969,885 $0 $40,969,885 $5,700 $0	FABRICATE NAVAL REACTOR CORE
- - - - - - - - - - - - - - -				
AC12-83SN39027 UNC RESOURCES INC UNC NAVAL PRODUCTS DIV UNCASVILLE CT 06382	03/29/1983 10/12/1990 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE PRE-CICA OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$50,652,188 $50,652,188 $0 $50,652,188 $343,239- $0	FABRICATE NAVAL REACTOR CORE
- - - - - - - - - - - - - - -				
AC12-83SN39029 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505	03/31/1983 11/19/1988 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE PRE-CICA OTHER NEGOTIATED COMPETITIVE	NO NO	$54,625,575 $54,625,575 $0 $54,625,575 $35,700- $0	FABRICATE NAVAL REACTOR CORE
- - - - - - - - - - - - - - -				
AC12-84SN39035 UNC RESOURCES INC UNC NAVAL PRODUCTS DIV UNCASVILLE CT 06382	12/21/1983 11/30/1991 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE PRE-CICA OTHER NEGOTIATED COMPETITIVE	NO NO	$66,396,626 $66,396,626 $0 $66,396,626 $130,300 $106,200	FABRICATE NAVAL REACTOR CORE
- - - - - - - - - - - - - - -				
AC12-84SN39036 UNC RESOURCES INC UNC NAVAL PRODUCTS DIV UNCASVILLE CT 06382	03/28/1984 02/28/1992 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE PRE-CICA OTHER NEGOTIATED COMPETITIVE	NO NO	$56,178,966 $56,178,966 $0 $56,178,966 $82,100 $54,400	FABRICATE NAVAL REACTOR CORE

RPT-STANDARD1

RUN DATE: MAR 13, 1987

DOE PROCUREMENT AND ASSISTANCE DATA SYSTEN
ACTIVE AWARDS SUBJECT TO THE PRICE ANDERSON ACT
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7594MC.MK86160.DATA

AWARDING OFFICE: SCHENECTADY NAVAL REACTORS OFFICE

AWARD BIN- - - AWARD DATE / AWARDEE NAME - - - - - - - - - / AWARDEE DIVISION- - - - - - / CITY - - - - - - - - - - - - - / STATE ZIP CODE CICA FLAG / OFFERS COMPETITIVE EXEMPTION - - - -	COMPL DATE RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - / CFDA CODE AND DESCRIPTION- - - - - - - - - - - - / TYPE OF AWARD- - - - - - - - - - - - - / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION - - - - - -	SUPP/SERV CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK- - - - - / -- / -- / -- / -- / --
AC12-84SN39037 04/19/1984 BABCOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	01/31/1990 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED NON-COMPETITIVE	NO NO	$55,150,700 $55,150,700 $0 $55,150,700 $15,200 $0	FABRICATE NAVAL REACTOR CORES
- - - - - - - - - - - - - - -				
AC12-86SN39053 12/18/1985 BABBOCK & WILCOX CO NAVAL NUCLEAR FUEL DIV LYNCHBURG VA 24505 PRE-CICA	04/30/1992 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED COMPETITIVE	NO NO	$52,119,300 $52,119,300 $0 $52,119,300 $52,053,600 $65,700	FABRICATE NAVAL REACTOR CORES
- - - - - - - - - - - - - - -				
AC12-86SN39054 03/04/1986 UNC RESOURCES INC UNC NAVAL PRODUCTS DIV UNCASVILLE CT 06382 PRE-CICA	08/31/1993 4470 NUCLEAR REACTORS FIXED PRICE INCENTIVE OTHER NEGOTIATED COMPETITIVE	NO NO	$44,333,600 $44,333,600 $0 $44,333,600 $44,308,200 $25,400	FABRICATE NAVAL REACTOR CORES
- - - - - - - - - - - - - - -				

REPORT TOTALS:

TOTAL COUNT FOR REPORT	30
SUM OF TOTAL CONTRACT VALUES FOR REPORT	$9,698,878,507
SUM OF GOVERNMENT SHARES FOR REPORT	$9,698,878,507
SUM OF AWARDEE SHARES FOR REPORT	$0
SUM OF TOTAL OBLIGATIONS TO DATE FOR REPORT	$9,631,680,206
SUM OF PRIOR FISCAL YEAR OBLIGATIONS FOR REPORT	$614,362,012
SUM OF CURRENT FISCAL YEAR OBLIGATIONS FOR REPORT	$467,292,473

AWARDING OFFICE: WASHINGTON PROCUREMENT OFFICE

AWARD DIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / SUPP/SERV / CONSULTANT / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / CICA FLAG / EXTENT OF COMP OR SOLICITATION PROCEDURES / COMPETITIVE EXEMPTION / METHOD OF SOLICITATION	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
CR01-84RW00004 DUQUESNE LIGHT CO PITTSBURGH PA 15205 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	06/26/1984 06/30/1990 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HGIH LEVEL RADIOACTIVE WASTE
CR01-84RW00005 ARIZONA PUBLIC SERVICE CO PHOENIX AZ 94901 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	03/01/1984 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIO ACTIV E WASTE
CR01-84RW00006 UNION ELECTRIC CO ST. LOUIS MO 63116 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	03/06/1984 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
CR01-85RW00007 KANSAS GAS & ELECTRIC CO WICHITA KS 67201 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	10/10/1984 09/27/1990 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
CR01-84RW00008 ILLINOIS POWER CO DECATUR IL 62525 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	07/06/1984 06/30/1990 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE

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CR01-84RW00009 LOUISIANA POWER & LIGHT NEW ORLEANS LA 70161	03/30/1984 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND OR HIGH LEVEL RADIOACTIV WASTE.
- - - - - - - - - - - - - - -					
CR01-84RW00010 GULF STATES UTILITIES BEAUMONT TX 77704	09/18/1984 08/28/1989 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSA OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
- - - - - - - - - - - - - - -					
CR01-84RW00012 TEXAS UTILITIES GENERATING CO DALLAS TX 75201	07/16/1984 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND/OR HIGH LEVEL RADIOACTIV WASTE
- - - - - - - - - - - - - - -					
AC01-83NE32115 TELEDYNE ENERGY SYSTEMS TIMONIUM MD 21093	09/30/1983 09/30/1987 AG53 R&D/ENERGY - NUCLEAR - AD DEV COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED COMPETITIVE	NO	NO	$3,832,497 $3,832,497 $0 $3,770,000 $1,200,000 $1,550,000	DEVELOPMENT AND DEMONSTRATION OF RTG TECHNOLOGY FOR SPECIAL APPLICATION
- - - - - - - - - - - - - - -					
AC01-84NE32123 GENERAL ELECTRIC CO PHILADELPHIA PA 19406	09/28/1984 09/27/1987 AR53 R&D/SPACE & TERRESTRIAL APPLIC - AD DEV COST PLUS FIXED FEE PRE-CICA OTHER NEGOTIATED COMPETITIVE	NO	NO	$2,700,000 $2,700,000 $0 $2,050,000 $650,000 $550,000	DEVELOPMENT OF IMPROVED THERM ELECTRIC MATERIALS FOR SPACE UCLEAR POWER SYSTEMS

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CR01-83NE44361 ALABAMA POWER CO BIRMINGHAM AL 35291	06/30/1983 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FU EL AND/OR HIGH LEVEL RADIOACT IVE WASTE
CR01-83NE44363 ARKANSAS POWER & LIGHT CO LITTLE ROCK AR 72203	06/30/1983 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH L VEL RADIOACTIVE WASTE
CR01-83NE44366 GA TECHNOLOGIES INC SAN DIEGO CA 92138	06/27/1983 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIO- ACTIVE WASTE
CR01-83NE44367 BALTIMORE GAS & ELECTRIC BALTIMORE MD 21203	06/30/1983 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT FUEL
CR01-83NE44368 BOSTON EDISON CO BOSTON MA 02199	06/30/1983 06/30/1988 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPEND NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE

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CR01-83NE44371 TOLEDO EDISON CO TOLEDO OH 43652	06/30/1983 PRE-CICA	06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
CR01-83NE44372 COMMONWEALTH EDISON CO CHICAGO IL 60690	06/17/1983 PRE-CICA	06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIO-ACTIVE WASTE
CR01-83NE44373 CONSOLIDATED EDISON CO OF NY NEW YORK NY 10003	06/30/1983 PRE-CICA	06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
CR01-83NE44374 CONSUMERS POWER CO JACKSON MO 49201	06/30/1983 PRE-CICA	06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
CR01-83NE44377 DAIRYLAND POWER COOP LA CROSSE WI 54601	06/30/1983 PRE-CICA	06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE

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CR01-83NE44378 DETROIT EDISON CO NEWPORT MI 48166 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	06/30/1983 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
CR01-83NE44379 DUKE POWER CO CHARLOTTE NC 28242 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	06/30/1983 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF NUCLEAR SPENT FUEL
CR01-83NE44380 DUQUESNE LIGHT CO PITTSBURGH PA 15219 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	06/30/1983 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
CR01-83NE44382 FLORIDA POWER CORP CRYSTAL RIVER FL 32629 NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	06/30/1983 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
CR01-83NE44383 FLORIDA POWER & LIGHT CO MIAMI FL 33[illegible] NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	06/30/1983 06/30/1988 NO NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL

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201-83NE44384 GENERAL ELECTRIC CO SUNNYVALE CA 94086 PRE-CICA	06/30/1983 NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
201-83NE44385 SPU NUCLEAR CORP PARSIPPANY NJ 07054 PRE-CICA	06/30/1983 NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
201-83NE44386 GEORGIA POWER CO ATLANTA GA 30302 PRE-CICA	06/30/1983 NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
201-83NE44390 IOWA ELECTRIC & LIGHT CEDAR RAPIDS IA 52406 PRE-CICA	06/30/1983 NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
201-83NE44392 LONG ISLAND LIGHTING CO NEW YORK NY 11801 PRE-CICA	06/30/1983 NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988	NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL

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CR01-83NE44394 MAINE YANKEE ATOMIC POWER AUGUSTA ME 04336	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1989 NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND OR HIGH LEVEL RADIOACTIVE
CR01-83NE44395 MISSISSIPPI POWER & LIGHT CO JACKSON MS 39205	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1989 NO	NO	$0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
CR01-83NE44397 NEBRASKA PUBLIC POWER DISTRICT COLUMBUS NE 68601	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988 NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44398 NIAGARA MOHAWK POWER CO SYRACUSE NY 13202	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988 NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL
CR01-83NE44399 NORTHEAST UTILITIES SERVICE CO HARTFORD CT 06141	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1989 NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND OR HIGH LEVEL RADIOACTIVE WASTE

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CR01-83NE44400 NORTHERN STATES POWER CO MINNEAPOLIS MN 55401	06/30/1983 06/30/1989 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FU AND OR HIGH LEVEL RADIOACTIV WASTE
CR01-83NE44401 OMAHA PUBLIC POWER DISTRICT OMAHA NE 68102	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FU AND FOR HIGH LEVEL RADIOACTI WASTE
CR01-83NE44402 PACIFIC GAS & ELECTRIC CO SAN FRANCISCO CA 94106	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FU AND FOR HIGH LEVEL RADIOACTI WASTE
CR01-83NE44404 PENNSYLVANIA POWER & LIGHT CO ALLENTOWN PA 18101	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FU AND FOR HIGH LEVEL RADIOACTI WASTE
CR01-83NE44405 PHILADELPHIA ELECTRIC CO PHILADELPHIA PA 19101	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE

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CR01-83NE44406 06/30/1983 06/30/1988 NO NO PORTLAND GENERAL ELECTRIC PORTLAND OR 97204 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
- - - - - - - - - - - - - - -		
CR01-83NE44407 06/30/1983 06/30/1988 NO NO POWER AUTHORITY STATE OF NY NEW YORK NY 10019 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
- - - - - - - - - - - - - - -		
CR01-83NE44408 06/30/1983 06/30/1988 NO NO PUBLIC SERVICE CO OF COLORADO DENVER CO 80211 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND FOR HIGH LEVEL RADOACTIVE WASTE
- - - - - - - - - - - - - - -		
CR01-83NE44411 06/30/1983 06/30/1988 NO NO PUBLIC SVC ELECTRIC & GAS CO NEWARK NJ 07101 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND FOR HIGH LEVEL RADIOACTIV WASTE
- - - - - - - - - - - - - - -		
CR01-83NE44415 06/30/1983 06/30/1988 NO NO SACRAMENTO MUNICIPAL UTIL DIST SACRAMENTO CA 95813 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL FD SPENT NUCLEAR FUE AND FOR HIGH LEVEL RADIOACTIV WASTE

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IN DATE: MAR 13, 1987

DOE PROCUREMENT AN ISTANCE DATA SYSTEM
ACTIVE AWARDS SUBJECT THE PRICE ANDERSON ACT
ORDERED BY AWARDING OFFICE AND SERIAL NUMBER
PROGRAM - U7594MC.MK86180.DATA

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R01-83NE44417 SOUTH CAROLINA ELECTRIC CO COLUMBIA SC 29218	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1989		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
R01-83NE44418 SOUTHERN CALIFORNIA EDISON CO ROSEMEAD CA 91770	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
R01-83NE44419 ROCHESTER GAS & ELECTRIC CORP ROCHESTER NY 14649	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1989		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
R01-83NE44420 TENNESSEE VALLEY AUTHORITY CHATTANOOGA TN 37401	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
R01-83NE44423 VIRGINIA ELEC & POWER CO RICHMOND VA 23261	06/30/1983 PRE-CICA NO FUNDS OTHER FORMAL ADVERTISING	06/30/1988		NO	NO	$0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.

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CR01-83NE44424 WASHINGTON PUBLIC POWER SUPPLY RICHLAND WA 99352	06/30/1983 06/30/1989 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND FOR LEVEL RADIOACTIVE WASTE
CR01-83NE44425 WISCONSIN ELECTRIC POWER MILWAUKEE WI 53201	06/30/1983 06/30/1989 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44426 GENERAL ELECTRIC CO SAN JOSE CA 95125	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND FOR HIGH LEVEL RADIOACTIV WASTE
CR01-83NE44427 NUCLEAR FUEL SERVICES INC ROCKVILLE MD 20852	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND FOR HIGH LEVEL RADIOACTIV WASTE
CR01-83NE44428 YANKEE ATOMIC ELECTRIC CO FRAMINGHAM MA 01701	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE AND OR HIGH LEVEL RADIOACTIVE WASTE

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CR01-83NE44429 WISCONSIN PUBLIC SERVICE CORP KEWAUNEE WI 54305 PRE-CICA	06/30/1983 06/30/1989 NO FUNDS OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44430 WESTINGHOUSE ELECTRIC CORP ZION IL 60099 PRE-CICA	06/30/1983 06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUI AND FOR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44431 VERMONT YANKEE NUCLEAR POWER FRAMINGHAM MA 01701 PRE-CICA	06/30/1983 06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUI AND FOR HIGH LEVEL RADIOACTI WASTE
CR01-83NE44440 INDIANA MICHIGAN ELECTRIC COLUMBUS OH 43215 PRE-CICA	06/30/1983 06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND G FOR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44467 NORTHEAST UTILITIES SERVICE CO HARTFORD CT 06101 PRE-CICA	06/30/1983 06/30/1988 NO FUNDS OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUI AND FOR HIGH-LEVEL RADIOACTI WASTE

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ARD DIN- - - AWARD DATE / AWARDEE NAME - - - - - - - - - / AWARDEE DIVISION- - - - - - / CITY - - - - - - - - - - - - / STATE / ZIP CODE / OFFERS	COMPL DATE / PRODUCT/SERVICE CODE AND DESCRIPTION - - - - - / CFDA CODE AND DESCRIPTION- - - - - - - - - - - - / TYPE OF AWARD- - - - - - - - - - - - - - / CICA FLAG / COMPETITIVE EXEMPTION - - - -	RETIR DATE / SUPP/SERV / EXTENT OF COMP OR SOLICITATION PROCEDURES / METHOD OF SOLICITATION - - - - - -	CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK- - - - - -
01-83NE44468 ORTHEAST UTILITIES SERVICE CO HARTFORD CT	06/30/1983 06101	06/30/1983 PRE-CICA	NO NO FUNDS OTHER FORMAL ADVERTISING	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH-LEVEL RADIOACTIVE WASTE
01-83NE44469 ONNECTICUT YANKEE HARTFORD CT	06/30/1983 06101	06/30/1988 PRE-CICA	NO NO FUNDS OTHER FORMAL ADVERTISING	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUE L AND/OR HIGH LEVEL RADIOACTIV E WASTE.
01-83NE44470 HILADELPHIA ELECTRIC CO PHILADELPHIA PA	06/30/1983 19101	06/30/1988 PRE-CICA	NO NO FUNDS OTHER FORMAL ADVERTISING	NO	$0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
01-83NE44471 LORIDA POWER & LIGHT CO MIAMI FL	06/30/1983 33102	06/30/1988 PRE-CICA	NO NO FUNDS OTHER FORMAL ADVERTISING	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
01-83NE44472 LORIDA POWER & LIGHT CO MIAMI FL	06/30/1983 33102	06/30/1988 PRE-CICA	NO NO FUNDS OTHER FORMAL ADVERTISING	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE

AWARDING OFFICE: WASHINGTON PROCUREMENT OFFICE

AWARD BIN / AWARDEE NAME / AWARDEE DIVISION / CITY / STATE / ZIP CODE / OFFERS	AWARD DATE / COMPL DATE / RETIR DATE / PRODUCT/SERVICE CODE AND DESCRIPTION / CFDA CODE AND DESCRIPTION / TYPE OF AWARD / CICA FLAG / EXTENT OF COMP OR SOLICITATION PROCEDURES / COMPETITIVE EXEMPTION / METHOD OF SOLICITATION	SUPP/SERV	CONSULTANT	CONTRACT VALUE / GOVERNMENT SHAR / AWARDEE SHARE / TOT OBS TO DATE / PRIOR FY OBS / CURRENT FY OBS	DESCRIPTION OF WORK
CR01-83NE44473 NORTHERN STATES POWER CO MINNEAPOLIS MN 55401 NO FUNDS	06/20/1983 06/30/1988 PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND FOR HIGH-LEVEL RADIOACTIVE WASTE
CR01-83NE44474 NORTHERN STATES POWER CO MINNEAPOLIS MN 55401 NO FUNDS	06/20/1983 06/30/1988 PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE.
CR01-83NE44475 NEBRASKA PUBLIC POWER DISTRICT COLUMBUS NE 68601 NO FUNDS	06/24/1983 06/30/1988 PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH-LEVEL RADIOACTIVE WASTE.
CR01-83NE44476 GPU NUCLEAR CORP PARSIPPANY NJ 07054 NO FUNDS	06/30/1983 06/30/1988 PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTES.
CR01-83NE44477 GPU NUCLEAR CORP PARSIPPANY NJ 07054 NO FUNDS	06/30/1983 06/30/1988 PRE-CICA OTHER FORMAL ADVERTISING	NO	NO	$0 $0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTES.

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CR01-83NE44478 GEORGIA POWER CO ATLANTA GA 30302	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44479 GEORGIA POWER CO ATLANTA GA 30302	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44480 PUBLIC SVC ELECTRIC & GAS CO NEWARK NJ 07101	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44481 CAROLINA POWER & LIGHT CO RALEIGH NC 27602	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44482 BABCOCK & WILCOX CO RESEARCH & DEVELOPMENT DIV LYNCHBURG VA 24505	06/30/1983 06/30/1988 NO NO NO FUNDS PRE-CICA OTHER FORMAL ADVERTISING	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE

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CR01-83NE44483 DOW CHEMICAL CO MIDLAND MI 48640	06/30/1983 NO FUNDS PRE-CICA	06/30/1988 OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44484 AEROTEST OPERATIONS INC SAN RAMON CA 94583	06/30/1983 NO FUNDS PRE-CICA	06/30/1988 OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0	TO AWARD CONTRACT FOR DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTES
CR01-83NE44485 UNION CARBIDE CORP TUXEDO NY 10987	06/30/1983 NO FUNDS PRE-CICA	06/30/1988 OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE
CR01-83NE44486 NORTHROP CORP RESCH & TECHNOLOGY CTR PALOS VERDES ESTATES CA 90274	06/30/1983 NO FUNDS PRE-CICA	06/30/1988 OTHER FORMAL ADVERTISING		NO	NO	$0 $0 $0 $0 $0 $0	DISPOSAL OF SPENT NUCLEAR FUEL AND/OR HIGH LEVEL RADIOACTIVE WASTE

REPORT TOTALS:

TOTAL COUNT FOR REPORT	79
SUM OF TOTAL CONTRACT VALUES FOR REPORT	$6,532,497
SUM OF GOVERNMENT SHARES FOR REPORT	$6,532,497
SUM OF AWARDEE SHARES FOR REPORT	$0
SUM OF TOTAL OBLIGATIONS TO DATE FOR REPORT	$5,820,000
SUM OF PRIOR FISCAL YEAR OBLIGATIONS FOR REPORT	$3,850,000
SUM OF CURRENT FISCAL YEAR OBLIGATIONS FOR REPORT	$2,100,000

QUESTIONS FROM SENATOR JOHNSTON

Question 8. Witnesses have testified that expiration of the Price-Anderson Act would cause contractors to shy away from doing business with the Department of Energy because of the potential for being subjected to unlimited liability without Price-Anderson coverage.

-- Isn't a more likely scenario, however, that DOE would strive to maintain its contractors and provide indemnity under Public Law 85-804?

Answer: See our response to Question 2.

QUESTIONS FROM SENATOR JOHNSTON

Extend DOE Contractor Portion of Price-Anderson

Question 9(a): The bill I have introduced, S. 748, addresses only the DOE contractor portion of the Price-Anderson Act. What would be the impact of separating the two parts, renewing the contractor portion now, and leaving renewal for NRC licensees for some future date?

Answer: If S. 748 were enacted prior to August 1, 1987, the Department's nuclear programs would not be adversely impacted.

Leaving renewal for Nuclear Regulatory Commission (NRC) licensees to some future date would not impact currently licensed commercial nuclear powerplants, although the retrospective premiums available to pay claims resulting from a major nuclear accident would remain at $5 million per reactor per incident. Coupled with the $160 million "first layer" of private insurance, this would provide the public with an readily available, assured "fund" of about $700 million for the payment of claims.

Enactment of S. 748 would fail to provide equal treatment to the public in the unlikely event a major nuclear accident were to occur. In its 1983 report to Congress, DOE recommended that liability limits in connection with DOE's contractual activities should equal that of commercial

Answer 9(a) (continued): licensees because the financial protection afforded the public should be the same, irrespective of the source of a nuclear incident. As a result, DOE continues to recommend that any legislation to extend Price-Anderson coverage should provide comparable treatment for NRC licensees and DOE contractors.

Moreover, failure to extend Price-Anderson coverage to NRC licensees before August 1 fails to acknowledge the fact that the Price-Anderson system has "worked" for nearly 30 years. Price-Anderson remains as important today as in 1957--when Congress originally enacted this landmark legislation--in assuring that our future electric power needs can be met, in part, by new nuclear powerplants, as part of a balanced and mixed U.S. energy supply system.

QUESTIONS FROM SENATOR JOHNSTON

Extend DOE Contractor Portion of Price-Anderson

Question 9(b): What would be the impact of renewal of the Act with different liability limits for DOE contractors and NRC licensees?

Answer: As noted in our answer to Question 9(a), different liability limits for DOE contractors and NRC licensees would provide unequal treatment of the public in the unlikely event a major nuclear accident were to occur. The limitation on liability for DOE contractors and NRC licensees should be comparable. This would provide the public with a source of funds to cover their claims, irrespective of the source of an accident.

QUESTIONS FROM SENATOR JOHNSTON

Question 10(a). Under S. 748, as well as the Senate compromise bill of the last Congress, payments made to victims of an accident at a DOE facility would come from available federal funds. For accidents involving nuclear waste, payments would be made from the nuclear waste fund. However, all of these payments would be subject to the availability of appropriated funds. Please explain how DOE would go about making payments.

(b) -- What would the Department do if there was only a limited amount of funding available?

(c) -- Would the Department be likely to make a request for a supplemental appropriation in the aftermath of an accident?

(d) -- Would the Department consider stopping all other programs not necessary to the national defense in order to compensate the public for damages of an accident, if necessary?

Answer: (a) Normally claims would be paid from the appropriation account that generated the activity that resulted in the incident. If that account did not contain enough funds to cover the claims, the Department would need to seek additional appropriations from Congress.

We have more flexibility in making emergency payments. Section 170.m. of the Atomic Energy Act of 1954, as amended, provides that "any funds appropriated to the Commission" would be available for "the purposes of providing immediate assistance following a nuclear incident." Because this

provision uses the word "Commission", which refers to DOE's predecessor agency, the Atomic Energy Commission, and because the Commission's authority encompassed nuclear activities, such as those funded by the DOE Atomic Energy Defense Activities, Energy Supply Research and Development, the General Science and Research Appropriation accounts, these accounts could be used to make emergency payments in the event of a nuclear incident. The Act does not mandate that the Department use these other funds to meet its obligations. The Department would still have the option to seek additional appropriations from Congress.

(b), (c) If payment of claims for an accident resulted in a significant decrease in our available funds, it is possible that we would request a supplemental appropriation.

(d) In the event of a nuclear accident, the Department would be authorized to expend funds from accounts other than the account that generated the accident only in order to provide immediate assistance after the accident.

QUESTIONS FROM SENATOR JOHNSTON

Payments from the Nuclear Waste Fund

QUESTION 11(a): Does the Department feel that the nuclear waste fund is an appropriate place from which to draw compensation for the public for waste accidents?

(b) -- What if there is insufficient money in the fund to pay damages?

(c) -- Should the Department be authorized to draw from appropriated funds from other programs?

(d) -- If so, in the aftermath of an accident, should the Department be authorized to adjust the waste fee to recover payments made in excess of the nuclear waste fund balance?

(e) -- Suppose an accident at a repository occurred after closure--a major leak, for example--would funds be available in the nuclear waste fund at that time? Wouldn't the fund be consumed in constructing the repository?

ANSWER: The Department believes that the nuclear waste fund is an appropriate place from which to draw compensation for the public in the unlikely event of waste accidents. If there is insufficient money in the fund to pay damages, the Department may borrow from the Treasury in accordance with Section 302(e)(5) of the Nuclear Waste Policy Act of 1982. The department is authorized to draw from other appropriated funds of the Department to provide immediate assistance following a nuclear incident pursuant to Section 170.m. of the Atomic

ANSWER 11(a) CON'T

Energy Act of 1954, as amended (one of the Price-Anderson provisions) wherein "any funds appropriated to the Commission shall be available for such payments." (See our response to Question 10(a).) If such appropriated funds are used in advance of funds from a deficient nuclear waste fund balance, the Department is already authorized under Section 302(a)(4) of the Nuclear Waste Policy Act to adjust the fees so as to provide sufficient funds to offset costs, which would include costs arising under the Price-Anderson Act.

It is difficult at this point to consider the mechanisms for making funds available under Price-Anderson for an accident at a repository that occurs after closure of a repository. Since closure of a repository will not occur until the second half of the next century it might be wise to defer consideration of this question until a later extension of the Act.

QUESTIONS FROM SENATOR JOHNSTON

Question 12. At the end of last year, there appeared to be general agreement that the Senate compromise worked out between the Energy and Natural Resources Committee and the Environment and Public Works Committee (and published in the Congressional Record of October 6, 1986) was a reasonable vehicle for renewal of the Price-Anderson Act. Please tell us any problems you have with the provisions of that compromise.

--What should be done to fix any problems you have identified?

Answer: We are aware that there have been differing views expressed on various key provisions of proposed Price-Anderson legislation, and that your committee was instrumental near the end of the 99th Congress in introducing a proposed Senate compromise bill to reconcile these views.

The Department is prepared to support such compromise legislation this session if the "total package" is one that provides an acceptable framework for continuing the Department's nuclear operations under Price-Anderson. Section 9(a) in the Senate compromise bill of last session is not acceptable to the Department because it could be interpreted to abrogate the sovereign immunity

provisions of the Federal Tort Claims Act and inappropriately permit the Government to be sued for its actions as if it were a contractor. With the deletion of that provision, we could support the compromise.

QUESTIONS FROM SENATOR JOHNSTON

Question 13. If the Act is renewed with an aggregate limit on liability of $6 billion, contractors will be liable for that amount. Will DOE go back and negotiate any indemnity agreements still in force at the time of renewal to assure that all contractors are indemnified for the full $6 billion? If not, why not?

Answer: Yes. If the Price-Anderson Act is renewed, we intend to amend all existing indemnity agreements so that they are consistent with current law.

QUESTIONS FROM SENATOR JOHNSTON

Question 14. Why should we limit liability in the case of contractors indemnified by the Federal Government?

-- Don't we intend to have full compensation for victims of accidents where Federal activities are involved?

-- If so, why not just say that liability will be unlimited up front?

-- In effect, the Federal Government self insures, and we will pay all the l gitimate damages. so why do we have all the fuss about limiting liability that just suggests we don't <u>really</u> intend to pay damages?

Answer: Yes, we intend to compensate victims of accidents where Federal activities are involved. However, in the event of a severe accident that results in large liability claims, we believe that the Congress should retain the right to review the circumstances surrounding the particular accident to determine if there is a need to tailor a compensation system to the circumstances of that accident.

QUESTIONS FROM SENATOR JOHNSTON

Question 15. Why should contractors that are willfully negligent or grossly negligent be indemnified?

-- If we indemnify contractors in these circumstances, where is the incentive for safe operation of the facilities?

-- Isn't it true that DOE has no authority to levy civil fines on contractors no matter how unsafe their operations are?

-- Shouldn't DOE have that authority? If not, why not?

Answer: The Department believes that the Price-Anderson indemnity system functions best without gaps in coverage based on gross negligence or willful misconduct. Such exceptions could interfere with the basic purpose of Price-Anderson, to protect the public and to encourage industry participation in nuclear activities.

Based on our experience since 1957, we see no reason for changing Price-Anderson in this regard. There is no evidence that such an exception in Price-Anderson would enhance safety. But we believe that if DOE contractors were subject to suit based on legally imprecise terms such as willful negligence or gross negligence, they would either raise the cost of doing business with us or

decline to operate our Government-owned facilities.

DOE contractors are responsible for complying with Federal and State environmental, health, and safety laws as well as stringent DOE Orders. Additionally, the contractor's responsibility for safety extends to all goods and services supplied to it by subcontractors. The financial incentives directed towards contractor accountability assure that it maintains control over the safety-related aspects of all its activities, including subcontractor activities.

To ensure that these laws and DOE environmental, health, and safety orders are followed, DOE regularly inspects its facilities and may reduce the amount of the fee awarded to a contractor for inadequate performance in these areas. DOE decisions in this regard may also affect the compensation and careers of contractor management.

The Department can cancel a contract if the contractor has failed to meet environmental, health, and safety requirements. DOE can withhold for cause all or a portion of the contractor's

award fee. While DOE has not terminated any contract for failure to comply with environmental, health, and safety regulations, we recently opened to competitive bidding the operating contract at the Department's Feed Materials Production Center near Fernald, Ohio. Our purpose was to obtain the best management possible at the facility and we subsequently awarded the operating contract to Westinghouse. In FY 1985, DOE withheld approximately $400,000 of an award fee from an operating contractor for performance considered less than optimum in management, environmental protection, and quality assurance.

Although the Department does not have authority to levy civil penalties on the contractor, it has a mechanism for penalizing poor performance on the part of our contractors through the award fee system. Therefore, we do not believe that we need authority to levy civil penalties on our contractors.

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QUESTIONS FROM SENATOR JOHNSTON

Question 16: When Federal employees perform activities with a nuclear risk shouldn't the Federal Government be treated just like a contractor under the Price-Anderson Act?

-- If not, wouldn't this be a "loophole" in the Act from the point of view of the threatened public? That is, protection of the public under the Price-Anderson Act would be pretty severely weakened, for example, at nuclear waste sites if the Secretary operated the site with Federal employees. Then, if an accident took place, the protection of Price-Anderson would not be available because injured parties would have to sue under the Federal Tort Claims Act. Shouldn't we close this loophole?

Answer: The Department opposes any legislation that would permit Federal employees to be sued outside of the Federal Tort Claims Act (FTCA). The FTCA is a carefully crafted statute that permits suits against the Government when appropriate. In certain circumstances, Federal employees performing activities with a nuclear risk may be subject to suit under the FTCA and injured persons could recover damages. However, the United States is not liable for the discretionary policy decisions of either the Executive or Legislative Branches and we believe this is sound public policy. If changes to the FTCA are necessary, we believe that they should be made in the FTCA and not through amendment of the Price-Anderson Act.

QUESTIONS FROM SENATOR JOHNSTON

Question 17: The Department argues that this provision in S. 748 would conflict with the sovereign immunity provisions of the Federal Tort Claims Act. But isn't the Price-Anderson Act already an exception to the Federal Tort Claims Act?

Answer: The Price-Anderson Act has never applied to suits against the United States Department of Energy or its predecessor agencies.

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QUESTIONS FROM SENATOR JOHNSTON

Question 18: The Department argues that any change in the provisions of existing law that would allow subrogation or that would eliminate coverage for gross negligence would create a situation where contractors would refuse to do business. Please explain this argument as explicitly and succinctly as possible. What evidence do you have that this would drive contractors away?

Answer: A DOE contractor subject to suit by the Department for recovery of Price-Anderson payments may not be able to insure against such potential liability. It is possible that responsible entities such as the educational institutions and not-for-profit organizations that operate several of our major facilities would decline to do business with us, rather than be exposed to such liability. The Department believes that any indemnity program should provide complete coverage without gaps that defeat the basic purpose of the indemnity program and leave the industry and others unprotected from liability.

Testimony before this and other Congressional committees from DOE contractor representatives has confirmed that DOE contractors would be reluctant to participate in our nuclear programs if they were exposed to liability for nuclear accidents while participating in these programs.

QUESTIONS FROM SENATOR JOHNSTON

Question 19: Please explain the difference between the Price-Anderson Act and other federal laws that exempt coverage for gross negligence.

Answer: We are not aware of any Federal contractor indemnity statute that exempts coverage for gross negligence.

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QUESTIONS FROM SENATOR JOHNSTON

Question 20: How are DOE's relationships with its contractors different from relationships between other federal agencies and their contractors?

Answer: Our Government-owned contractor-operated nuclear facilities are operated by divisions or units of large corporations, educational institutions, or consortia of educational institutions which are not permitted to do work for any other Federal agency or any private company, without DOE's written permission. Therefore all their work is strictly supervised and controlled by the Department of Energy. No other Federal agency has such a relationship with its contractors.

QUESTIONS FROM SENATOR JOHNSTON

Question 21. What is a contractor's liability for damage to government property under existing contracts?

-- Does the indemnity provided by Price-Anderson extend to that liability and could that at any time reduce the amount of compensation available to the public?

Answer: Generally, our cost reimbursement contractors are not liable for damage to government property under existing contracts, see 48 CFR 970.5204-21. Furthermore, since the Government is wholly responsible for indemnity payments under the Price-Anderson indemnity clause of the contract, it would be senseless for DOE to attempt to recover damages from the contractor when DOE would ultimately be responsible for paying those damages. Therefore, we do not envision a situation where the amount of compensation available to the public would be reduced by an indemnity paid to a contractor to cover its liability for damage to Government property.

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QUESTIONS FROM SENATOR JOHNSTON

Question 22. Since 1957, how much money has been spent by the Federal Government on defending and settling claims brought against its contractors under the Price-Anderson Act?

Answer: We do not have records on how much has been spent by the Federal Government on defending and settling claims brought under Price-Anderson.

QUESTIONS FROM SENATOR JOHNSTON

Question 23. Should DOE be required to indemnify its contractors under Price-Anderson? Indemnification was mandatory under S. 1225 as passed by the Energy and Natural Resources Committee in the 99th Congress. Should this provision be included in S.748? Why or why not?

Answer: We prefer optional Price-Anderson coverage for DOE nuclear activities, at the discretion of the Department. Contracts for certain nuclear activities do not involve the risk of a substantial nuclear incident and should not be indemnified by the Government. In some circumstances, liability protection may be available from the private sector and Government indemnity would be inappropriate.

QUESTIONS FROM SENATOR FOWLER

Question 24: According to GAO testimony before the Government Affairs Committee last week, the agency's work on safety matters at DOE facilities "has resulted in several reports that have identified important safety issues. These issues, in view of their importance and scope, raise serious questions about both the safety of individual facilities and DOE operations as a whole."

Do you believe that safety at DOE facilities could be improved? If so, how? Do you believe there is a need for additional incentives for improved contractor performance?

Answer: When Secretary Herrington announced his environment, safety and health (ES&H) initiatives in September 1985, it was with the recognition that important issues such as the adequacy of ES&H oversight, and the legacy of aging facilities and past practices had to be addressed. One of these initiatives, the Technical Safety Appraisal (TSA) program (its analog for environmental protection is the Environmental Survey) was designed to ensure that the Department's facilities are being operated in an acceptably safe manner, with the expectation that needed safety improvements would be identified and acted upon. The results of the reviews to date have indicated that while a number of safety improvements are, indeed, needed, these facilities have been, and can continue to be, operated with an acceptable level of safety.

Safety improvements are being performed (and have been, in a routine sense, in the past) in the operation and design of the Department's facilities in response to both the headquarter's safety appraisals and those of the field, as

well as those of external expert groups (e.g., the Roddis consultants and the National Academies of Science and Engineering). These will serve to enhance the level of safety at these facilities through improved operational standards and practice, and facility safety design features. So, too, will an increased focus by the headquarters ES&H office on safety standards development and comparability (e.g. to commercial licensed operations).

With respect to the issue of the replacement or upgrading of aging facilities, the Department is facing a complex issue involving both ES&H and programmatic considerations. This issue has been under critical review by the Department, and as recognized by GAO recently, will need to be addressed in DOE's overall strategic planning. However, any assessment of this kind will be predicated on a finding that the facility in question is being operated with an adequate level of safety in the first place.

The issue of incentives to promote improved contractor performance in ES&H is under study by DOE. While the existing Cost-plus-award-fee program has its merits, DOE is examining other available options that can more effectively encourage optimal safety performance. This is in keeping with the Department's stated goal of seeking to go beyond compliance to achieve excellence in the safe operation of DOE facilities.

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QUESTIONS FROM SENATOR FOWLER

Question 25: Since at least 1981 the GAO has been recommending both internal and external improvements in safety oversight of DOE's defense production activi-ties. What has been done to implement these recommendations?

Answer: Several actions have been taken to improve and strengthen the DOE's safety oversight of its nuclear facilities. While these actions were not in direct response to GAO recommendations, they are pertinent to the safety oversight concerns expressed in their reports. Secretary Herrington's initiatives in this area have lead to a multifaceted plan that significantly upgrades DOE's oversight function. The key elements of the initiatives as related to safety are:

1. A new Assistant Secretary for Environment, Safety and Health and consolidation of all Departmental environment, safety and health functions under this official, whose responsibilities are independent from and do not include any programmatic functions;
2. Technical Safety Appraisals of DOE's major nuclear facilities to determine not only compliance with safety requirements, but also industry lessons learned and licensed facility practices; and
3. A computer assisted tracking system that will allow DOE to monitor compliance and assist in identifying and reducing areas of potential risk.

The first of the above elements has been accomplished. Environment, Safety and Health Department-wide policy is now set by this new office. Also, this office provides DOE line management with more detailed information about the nature of potential safety and environmental problems, and oversees more directly the activities of DOE. Activities of this office in the area of policy and guidance include: (1) review and upgrading the Department's policies in areas such as safety, design criteria, and analysis. Specific

examples include the recent revision and strengthening of the DOE safety Orders, and updating of several important safety-related design criteria elements in the Department's General Design Criteria Manual; (2) guidance given through "Nonreactor Nuclear Facilities Standards and Criteria Guide - Rev. 1" dated September 1986, and "Guide to Radiological Accident Considerations for Siting and Design of DOE Nonreactor Nuclear Facilities" dated January 1986; (3) additional guidance is being developed through the updating of the Nuclear Air Cleaning Handbook and in the area of natural phenomena hazards analysis; and (4) the safety analysis and review process is being improved in the following areas:

- Preparation of Safety Analysis Reports
- Independent review evaluation and documentation
- Development of Operational Safety Requirements
- Natural phenomena hazards mitigation guidance
- Upgrading of safety-related design guidance
- Development of Probability Risk Assessment guidance

In addition to the above overview and guidance activities provided by this office, DOE has obtained outside technical review and advice from prominent experts. This includes activities such as a review by six independent experts of the N Reactor located at Hanford, Washington, and the National Academies of Science and Engineering safety review of all DOE Category A reactors. When warranted and available, DOE has actively sought outside safety advice.

The second element of the Secretary's initiatives was to conduct thorough Technical Safety Appraisals of DOE's high and moderate hazard nuclear facilities by teams of experts led and directed by senior ES&H technical staff. In the course of these safety reviews, we will review more than 50 nuclear facilities in over 11 states. The onsite activity for each appraisal lasts

about 2 weeks, preceded by weeks of preparatory work. These comprehensive reviews are in addition to and are significantly different from our other ongoing safety appraisals. First, the Technical Safety Appraisals are detailed, multidisciplined reviews of a facility's operations. Secondly, the Technical Safety Appraisals will not only determine compliance with DOE requirements and policy, but will also review implementation of industry requirements, standards and guides, industry lessons learned, and good engineering practices. In this manner, these appraisals strive to reach a new standard of safety excellence at our facilities. Lastly, the appraisal teams consist of technical experts from DOE, private industry, universities, and private consultants. The appraisals began at the Fast Flux Test Facility in February 1986. To date, 13 appraisals have been conducted.

Lastly, the Computer Assisted Tracking System is being developed to allow monitoring compliance, assist in tracking the Technical Safety Appraisal recommendations and related program implementation plan's progress, and provide important safety-related information. This will appropriately help coordinate and consistently track important areas in assuring a safe operation. It will use the input of the first two elements to help achieve that goal.

In summary, DOE has taken significant actions to improve and enhance its safety oversight function. It meets and exceeds the intent of the past GAO recommendations regarding this subject.

QUESTIONS FROM SENATOR FOWLER

Question 26. What recourse does DOE have against its contractors if the contractor violates safety standards? Can the DOE impose fines or penalties against its contractors?

Answer: See response to Question 15.

QUESTIONS FROM SENATOR FOWLER

Question 27. Do you know of any other statute which, as implemented, provides federal indemnity as broad as Price-Anderson coverage? Do any other agencies fully indemnify contractors for gross negligence, bad faith, or intentional misconduct?

Answer: We are not aware of any statute that, as implemented, provides the unique public protection features of Price-Anderson. We do not know of any Federal agency that provides an indemnity with a gross negligence exclusion. Likewise DOE is unique in its extensive use of contractors to operate Government-owned nuclear facilities.

The indemnity provided pursuant to Public Law No. 85-804, included in certain Department of Defense contracts, does not apply to (1) Government claims against the contractor and (2) loss or damage affecting the contractor's property, if the claim, loss or damage was caused by willful misconduct or lack of good faith on the part of any of the contractor's principal officials. 48 CFR § 52.250-1.

QUESTIONS FROM SENATOR FOWLER

Question 28(a): Can you describe what kinds of losses you would anticipate in a worst-case accident at a DOE facility? How did the Department reach its position last session which supported a $2 billion liability cap for nuclear accidents?

Answer: Establishing the potential damages and amount of money that would be necessary to satisfy claims immediately after a nuclear incident at a DOE facility would require developing a complex model for each facility. This would include DOE facilities that involve reactor operations as well as the larger number of DOE facilities involved in nuclear-related activities. Each model would then have to be used to estimate the damages and the claims resulting from a specific incident and each model would have to be used to analyze each type of incident.

Estimating damages through modeling is a methodology that would require making a large number of assumptions about the type of incident which could occur and the complex chain of events that could follow. It would also require making assumptions about hundreds of variables, e.g., atmospheric conditions, population density, operator response, emergency plans in place, population response. Hundreds of scenarios would have to be developed and analyzed to establish a range for damages resulting from a nuclear incident. This approach would then have to be repeated for each DOE nuclear facility.

Answer 28(a) (continued): The Department believes that such an exercise would only lead to a very wide range of values for the damages resulting from a nuclear incident that would be of very little value in helping to establish a liability limit.

In addition, it is important to recognize that there is insufficient actuarial or statistical basis for associating dollar value with off-site radiation releases, especially of a low-level nature. The assumptions used to arrive at an estimate of damages would be subject to conjecture.

In a September 1981 hearing before the House Science and Technology Subcommittee on Energy Research and Production, former Deputy Secretary W. Kenneth Davis explained the Department's position in the following manner:

> "...(t)here have been a whole series of studies... trying to assess the possible damages as the result of various kinds of nuclear incidents. These have been followed by a whole series of...speculations. It all depends on your assumptions, how serious you think the occurrence might be, and what its probability is. The result is we have ended up over the years with enormous ranges of estimates of what the potential consequences might be, a very great degree of imprecision and wide ranges in individual studies, a great deal of discussion about the validity of the studies, and I would say that the odds on anybody being able to come up with a definitive figure are extremely remote. We simply don't have a methodology or a way of arriving at the figures nor the criteria by which one ought to pick the figure."

Answer 28(a) (continued): DOE believes that a process that satisfies claims by making a large fund available to satisfy the needs of claimants in the case of a nuclear incident is a reasonable, appropriate, and balanced approach. As a result, DOE testified last session that a fund containing $2.4 billion would be sufficiently large as long as the law continues to provide that Congress can make more funds available in an expeditious manner if valid claims exceed the size of the fund.

QUESTIONS FROM SENATOR FOWLER

QUESTION 28(b): What studies have been done that estimate the economic impact of a nuclear waste accident on the communities along transportation routes, as well as the host-community? What did these studies conclude?

ANSWER: For nuclear waste accidents, the Department has initiated studies to be performed by Brookhaven National Laboratory (BNL) on economic consequence modeling. This work will review the existing models that are applicable for economic consequence analysis of a release of radioactive material that could occur during waste disposal (repository preclosure, repository postclosure, transportation, and MRS), determine the deficiencies in the models, and recommend either modifications to existing models or preparation of new models.

Also, during FY 1986, BNL prepared detailed evaluations of the literature related to risks in the waste disposal system. This information is being examined jointly with the Pacific Northwest Laboratory (PNL). During FY 1987, BNL will continue working with PNL to prepare a final

report and will assemble more detailed evaluations of literature on risks into a companion report to be issued by BNL.

Final reports on both of these efforts are scheduled to be available by the end of the fiscal year.

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QUESTIONS FROM SENATOR FOWLER

Question 29. Should victims of nuclear accidents be given a legal right to full compensation?

Answer: We believe that victims of a nuclear accident should be provided full compensation through a mechanism like Price-Anderson that permits Congress to review the consequences of a severe accident above a reasonably high liability limit in order to tailor a compensation system to meet the needs of those victims.

QUESTIONS FROM SENATOR FOWLER

QUESTION 30: The states identified by DOE as candidates for a high-level nuclear waste repository have testified that removing the Price-Anderson liability limit is essential to the success of the nuclear waste program. In fact, the State of Washington has refused to sign a C&C agreement, in part because of the liability issue. How does the Department plan to reconcile this problem with the States? Does the Department view limited liability as an obstacle to the success of the nuclear waste program?

ANSWER: The Department would not object to legislation which includes approaches to liability limits for nuclear waste activities with retention of a Congressional review process to ensure that the public is compensated in the unlikely event of a major nuclear accident.

We would hope that the States would similarly accept such provisions.

The Department does not view the current Price-Anderson liability limit as an obstacle to the program since Congress has reserved for itself the responsibility to thoroughly review particular incidents and take whatever action it deemed necessary and appropriate to protect the public beyond the current "cap."

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QUESTIONS FROM SENATOR McCLURE

Questions 31. a) Which of your contracts come up for renewal soon after the August 1 expiration of Price-Anderson? What is the nature of the work undertaken by these particular contracts?

b) How much in advance of a contract renewal do negotiations on the contract begin?

c) Are you receiving any comments from your contractors that would indicate a reluctance on their part to renew their contracts absent Price-Anderson extension?

Answer: See responses to Questions 3 and 4.

QUESTIONS FROM SENATOR McCLURE

Question 32. What are the Department's alternatives, in terms of contract indemnification, if Price-Anderson is not extended? How do these alternatives compare to the Price-Anderson system, in terms of omnibus coverage of contractors, and in terms of our ability to compensate victims in a timely and reliable manner? Would these alternatives end up costing the Government more money? How much more?

Answer: For the first two parts of your question, please see our responses to Questions 1 and 2.

Utilization of the alternatives described in our responses to Questions 1 and 2, would necessitate a significant increase in administrative costs in order to negotiate and approve an indemnity in each contract, subcontract, and purchase order affected. We have no way of estimating how much more the cost would be.

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QUESTIONS FROM SENATOR McCLURE

Question 33. What is the claims experience to date associated with Price-Anderson coverage of DOE activities?

Answer: Only one significant incident under the Price-Anderson contract indemnity system has been recorded for activities conducted by the Atomic Energy Commission and its successor agencies. In 1961, a nuclear incident at a reactor occurred at a contract location in Idaho. Three U.S. servicemen lost their lives. Settlements were made in a total amount of $266,000 under the indemnity protection.

Records also indicate that in 1966 an employee of a subcontractor to a firm contracting with the AEC spilled some depleted uranium on her hand while opening a vial of the material and claimed that she incurred damages from such incident. In 1970 the Atomic Energy Commission approved settlement of the claim under the indemnity provision of the contract in the amount of $5,000.

In September 1985, a case involving two DOE contractor employees who were injured while repackaging nuclear scrap material was settled.

QUESTIONS FROM SENATOR MCCLURE

Question 34(a): There have been instances in which operation of DOE facilities has been deficient in terms of safety or environmental concerns. What mechanisms does DOE use to encourage excellence of performance on the part of contractors?

Answer: Environment, safety, and health (ES&H) activities represent an integral part of the Department's programs, most of which are executed at Government-owned, contractor-operated facilities. The contracts for these operations contain specific ES&H-related clauses which require the operating contractor to take all reasonable precautions in the performance of work to protect employees and the public and to comply with all applicable ES&H regulations and requirements established by DOE. These contract clauses also contain stop-work provisions in the event DOE officials determine that environmental or health and safety issues warrant immediate corrective action.

An important aspect of the Department's ES&H program is the multi-tiered system of checks and balances involving the contractor, DOE field office management and on-site Federal officials, and program office representatives of the various DOE Headquarters organizations. Responsibility for agency ES&H policy is assigned to an independent Headquarters

Answer 34(a) (continued): organization. Line management is responsible for implementing agency ES&H policy and assuring that contractor activities for which they are responsible are carried out in a manner that ensures compliance with applicable guidelines. Reviews to determine compliance with ES&H policies are carried out by independent offices established at the contractor, DOE field office, and Headquarters level.

QUESTIONS FROM SENATOR MCCLURE

Question 34(b): What mechanisms are available to punish poor performers?

Answer: There are three basic mechanisms available to the Department to punish poor contractor performance.

Stop-work provisions in contracts permit DOE officials to direct its contractors to cease any operation that has or could be considered to negatively impact the environment or where employee or public health or safety may be adversely affected. These actions can effect the Department's periodic evaluation of the contractor's performance and jeopardize meeting its contractual commitments.

Associated with the first mechanism, a portion of the award fee payable to a contractor under cost-plus-award-fee contracts is determined by DOE's evaulation of ES&H-related performance.

The third (and ultimate) mechanism available to DOE management to punish poor contractor performance is to change contractors. This third mechanism was used in replacing the former operating contractor at DOE's Fernald, Ohio, plant.

QUESTIONS FROM SENATOR MCCLURE

Question 34(c): Does the Price-Anderson system in any way detract from the safe operation of DOE facilities?

Answer: No. Although indemnified under Price-Anderson provisions, DOE contractors are required to safely operate Government-owned nuclear facilities and are aware of the penalties associated with not satisfactorily meeting their contractural obligations with the Federal Government (as noted in our answer to Question 34(b)).

Independent of the contractor's obligation to assure that Government-owned facilities are safely operated, DOE closely monitors ES&H-related performance to assure that applicable DOE regulations are adhered to by the contractor. Failure to comply with these regulations or safely operate DOE facilities could not only result in the contract with DOE being terminated but could also preclude the contractor from successfully obtaining and negotiating similar contracts with other Federal organizations.

QUESTIONS FROM SENATOR MCCLURE

QUESTION 35: Would explicit coverage of DOE waste activities within the Price-Anderson system help the Department in successfully completing C&C (consultation and cooperation) agreements with affected States?

ANSWER: Yes, the Department considers that explicit coverage of DOE waste activities in the Price-Anderson system would benefit C&C negotiations with the affected States and Tribes.

QUESTIONS FROM SENATOR McCLURE

Question 36. The Administration objects to a provision in our bill that would allow the Price-Anderson system to apply even in the unlikely event that a Federal employee (rather than a contractor) was directly involved in the activity that resulted in the accident. The objections are based primarily on the premise that this represents a huge exception to the Federal Tort Claims Act (FTCA) mechanism by which all Government suits are processed.

a) Don't you agree that, to all intents and purposes, the entire Price-Anderson system is already a quasi-loophole to the FTCA?

b) If, as the Department claims, the situation where Federal employees actually perform the DOE work will never happen, then why is DOE so afraid of this provision?

c) The reason we put this provision in the bill was to ensure the public that they would never be faced with a "loophole" to the Price-Anderson system of compensation. We have asked the Department of Energy as well as the Department of Justice to suggest other options that would assure the public that they would never be faced with a "loophole" situation, yet to date, we have not received any useful or workable proposals. Would the Department commit to work with our staff, and with representatives of the Justice Department, to see if we might come up with a viable alternative?

Answer: See responses to Questions 16 and 17. We have been working and are continuing to work with your staff and with staff of the Department of Justice to arrive at a viable alternative.

QUESTIONS FROM SENATOR McCLURE

Question 37. If Congress passed Price-Anderson legislation that increases the liability limit for DOE activities, will DOE have to amend all of its existing contracts in order to raise the indemnification provisions to reflect the increased liability? Does DOE have any plans to do this? Why or why not?

Answer: Yes. DOE would need to and plans to amend its contracts to reflect any increased liability so that the contracts would be consistent with current law.

QUESTIONS FROM SENATOR MCCLURE

QUESTION 38: It seems to me that DOE's current criteria for making a determination of whether an accident was an Extraordinary Nuclear Occurrence (ENO) are not broad enough to include accidents that might arise from nuclear waste disposal activities. Particularly disconcerting to me is the section of the regulation (10 CFR Part 840) which talks about "release of radioactive material from a production or utilization facility." I have looked up the definitions of "production" and "utilization" facilities in the Atomic Energy Act, and neither definition seems to fit nuclear waste disposal.

a) Does DOE have any plans to revise its ENO criteria, in light of the apparent inapplicability of the current criteria to DOE's waste activities?

b) Does DOE have any plans to update its entire "ENO criteria" system to reflect the changes now being proposed by the NRC?

ANSWER (a): The Department's current ENO criteria would appear to be applicable to any of DOE's waste activities at least up until the point of closure of a repository which will not occur until the second half of the next century.

If the Price-Anderson Act is amended so that the waiver of defenses provision is applicable to an extraordinary nuclear occurrence at a spent nuclear fuel, high-level or transuranic waste facility, a technical amendment to 10 CFR, Part 840 would be necessary. In particular, the

ANSWER 38 CON'T

section you refer to would have to be expanded to apply to such facilities.

(b): The NRC proposed changes to ENO criteria are still under review. DOE and others previously commented on the proposed NRC changes, noting a number of serious shortcomings. DOE desires, in principle, to keep its ENO criteria consistent with NRC's criteria, but we would have to determine whether to make changes in our criteria based on a review of NRC's actual changes.

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QUESTIONS FROM SENATOR METZENBAUM

Question 39. How many of DOE's contractors are indemnified by the Department of Defense (DOD) for ultrahazardous activities?

Answer: As explained in our response to Question 20, some of our Government-owned contractor-operated nuclear facilities are operated by divisions or units of large corporations. These divisions and units do not have operating contracts with any entity other than DOE. However, the parent corporations of these divisions and units may have contracts with the Department of Defense (DOD) and may be indemnified by DOD for ultrahazardous activity under their contract with DOD. However, we are not aware of the details of their work for DOD or if they are indemnified by DOD. Any such indemnity would be separate and distinct from the Price-Anderson indemnity afforded that contractor for its work at a DOE nuclear facility.

QUESTIONS FROM SENATOR METZENBAUM

Question 40. How many of those contractors are indemnified by the DOD for damages resulting from their own gross negligence or willful misconduct?

Answer: As explained in our response to Question 39 we are not familiar with the contractual arrangements between our contractors' parent corporations and DOD. We note, however, as explained in our response to Question 27, that certain DOD indemnities contain an exclusion for (1) Government claims against the contractor and (2) loss or damage affecting the contractor's property, if the claim, loss or damage were caused by willful misconduct or lack of good faith on the part of any of the contractor's principal officials.

QUESTIONS FROM SENATOR METZENBAUM

Question 41. Can the DOE levy fines against contractors, subcontractors or suppliers at its nuclear facilities? If so, please explain the circumstances under which such fines may be levied, and identify those occasions when fines have been issued over the last five years.

Answer: See response to Question 15.

QUESTIONS FROM SENATOR METZENBAUM

Question: 42: Under DOE's award fee system, does a contractor risk reimbursement for costs of fulfilling the contract, or are "fees" (i.e., profits) the only funds at risk?

Answer: As long as a contractor performs the contract work, they will be reimbursed all costs associated with contract performance determined to be allowable, and allocable to that contract. Funds set aside under an award fee contract to be included in an award fee pool must be earned pursuant to pre-established performance criteria. They are at risk. Poor ratings may result in low fees, or no fees.

QUESTIONS FROM SENATOR METZENBAUM

Question 43: Can subcontractors and suppliers also participate in the award fee system?

Answer: Subcontractors and suppliers are not precluded from entering into award fee contractual arrangements with the Government's prime contractors.

QUESTIONS FROM SENATOR METZENBAUM

Question 44: How many contractors have opted to participate in the award fee system since 1980?

Answer: DOE determines the fee arrangement for operating and managing its facilities. The contractor's option is whether or nor it will accept or compete for contract award under award fee criteria. The contractors are permitted to negotiate the specific terms of the fee arrangement.

DOE has 38 nuclear plants, test sites, and laboratories operated by profit organizations, academia, and nonprofit organizations. In some cases one contractor may operate more than one facility and in one instance, (Nevada Test Site) more than one contractor supports the DOE operation.

Of these nuclear facilities, there are 24 which could be considered for CPAF contractual arrangements. Of those, 21 or 84 percent have award fee arrangements.

In determining candidates for award fee coverage, facilities operated by educational institutions, and non-profit organizations are not considered appropriate for award fee.

Additionally, two facilities operated by profit organizations are done so on a no-fee basis and, therefore, also are not considered appropriate for award fee coverage.

QUESTIONS FROM SENATOR METZENBAUM

Question 45: What percentage of the total number of contractors does this represent?

Answer: That percentage is 84 percent. Please refer to Question 44.

Question 46: What average percentage of fees (or profits) does a contractor put into the system?

Answer: Contractors are not required by award fee contracting procedures to put fees into the system [award fee process]. However, a key feature of the process is the opportunity for a contractor to agree to a lower dollar amount of base fee than would normally be paid in order to increase the award fee amount (the second element of the total fee paid under the award fee contract).

The Department of Energy Acquisition Regulation Part 970.1509-8 prescribes the award fee procedures for management and operating contracts that are awarded on an award-fee basis. The incentive nature of award fee contracts contemplates a larger fee pool than the fixed fee that is applicable to a typical cost reimbursement contract. The combined base and award fee may range from 150 percent (50 percent base/100 percent award) up to 200 percent (0 percent base/200 percent award) of the fixed fee. For example, if the fixed fee available was $1 million, then on an award fee basis the regulation would permit a base fee of $500,000 (50 percent) and an award fee of $1 million (100 percent) for a total fee pool of $1.5 million. The regulation also permits the contractor to agree to a base fee dollar amount that is less than $500,000 in

QUESTIONS FROM SENATOR METZENBAUM

Question 46: (continued)

return for a higher award fee amount. Using the same example the contract may stipulate a base fee of $400,000 (40 percent of the fixed fee of $1 million) and an award fee pool of up to $1.2 million (120 percent of fixed fee), for a total fee pool of $1.6 million. With a zero base fee, the award fee could be $2 million.

In summary, a contractor may agree to a base fee on an award fee contract that ranges from 50 percent of the otherwise applicable fixed fee down to 0 percent (where the award fee pool could be equivalent to 200 percent of the otherwise applicable fixed fee).

QUESTIONS FROM SENATOR METZENBAUM

Question 47: What is the average returned by DOE?

Answer: The periodic award fee determinations which DOE made under award fee contracts with its nuclear facility contractors averaged 80.1 percent of the available award fee pools in FY 1986. (Although available data covers only Fiscal Year 1986, this data is viewed as also being generally representative of any other Fiscal Year).

QUESTIONS FROM SENATOR METZENBAUM

Question 48: How many award fees have been totally withheld since 1980?

Answer: To our knowledge, the only DOE nuclear facilities contractor which DOE determined should receive no award fees was National Lead of Ohio (NLO) during FY 1985.

QUESTIONS FROM SENATOR METZENBAUM

Question 49: Please identify and describe the circumstance surrounding the largest award fee ever withheld from a contractor of a DOE nuclear facility.

Answer: In FY 1985, award fees were withheld from NLO for two award fee determination periods:

(1) For the period 10/1/84 through 3/31/85 no award fee was granted. DOE determined that NLO failed to maintain an acceptable level of performance in environmental management and less than standard performance level in the area of safety, maintenance, and engineering. NLO also failed to perform at expected levels in areas of production operations, budget, small and disadvantaged business administration, and industrial relations. The amount of award fee available but not awarded was $1,180,000.

(2) For the period of 4/1/85 through 9/31/85 no award fee was granted. DOE determined that NLO failed to maintain an acceptable level of performance in environmental management and less than standard performance level in areas of budget, maintenance management engineering and construction and industrial relations. The amount of award fee available but not awarded was $1,180,000.

QUESTIONS FROM SENATOR METZENBAUM

Question 50: Is DOE aware of any contractor, subcontractor or supplier engaged in any ultrahazardous activity who has obtained government or private insurance (other than Price-Anderson Act coverage) against damages resulting from their own: a) gross negligence; b) willful misconduct; and c) bad faith?

If so please identify the company, the issuer of the insurance, the nature of the activity covered and the annual premimum.

Answer: No, we are not aware of such an occurrence. However, an expianation may be helpful.

Insurance policies generally do not use the terms gross negligence, willful misconduct, and bad faith in describing policy coverages or exclusions. For coverage, an "occurrence" must happen as defined in the policy. Occurrence is generally defined as an accident resulting in bodily injury or property damage neither expected nor intended from the standpoint of the insured. The "insured" is as defined in each policy and each such person or entity must be specifically designated. Claim judgment is necessary in each case to determine policy coverage and duty to defend.

No other Government insurance or government subsidized insurance, is used throughout the DOE contract operation to our knowledge.

QUESTIONS FROM SENATOR METZENBAUM

Question 51: Please identify all contractors that have informed you they will not continue to work at DOE nuclear facilities without Federal indemnification for damages resulting from their own gross negligence or willful misconduct.

- What justifications have been offered for taking such a position?

- Are these statements and justifications in writing?

What has DOE done to verify such claims, if there are any?

Answer: We have not been formally notified by nuclear facility contractors that they will not continue to work at DOE nuclear facilities without Federal indemnification for damages resulting from their own gross negligence or willful misconduct. However, prior to the DOE report to Congress in 1983, DOE had conducted a survey of its contractors regarding Federal indemnifications. At that time, the contractors indicated that the provisions of the Price-Anderson Act were essential to continuation of their contractual activities.

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SCHOOL OF LAW 435 West 116th Street

March 27, 1987

Senator J. Bennett Johnston
Chairman
Senate Committee on Energy
and Natural Resources
United States Senate
Washington, D.C. 20510

Dear Senator Johnston:

Your letter of March 20 took exactly one week to get to me. I do not know whether I can get a response to you in time for the mark-up but I will do my best.

In the following pages I will answer your questions first and then the questions of Senator McClure. In the interest of speed, I will not repeat the questions.

Questions of Senator Johnston

1. I have always assumed that reactors which received construction permits during the effective period of the statute or any extension thereof would be covered for the life of the license. I have not seen any counter-argument and so remain of the opinion that they are so covered.

2. I think there is very little doubt that it was the intent of Congress in 1957 to provide indemnification through the period of the license. I do not have time for research but I would call to your attention that in Senate Report No. 296, 85th Congress fist session at page 9 the following appears:

> "the provisions of this bill provide governmental indemnifications to those licensees who obtain their licenses within the next ten years. The indemnification agreement is to run for the life of the license."

While I am aware of all the frailties of statutory interpretation I think that statement in the report is about as close as one can come to a sure thing. It was certainly the understanding of all those who at the birth that all reactors that received a construction permit within the ten year period would be covered for the life of the license.

That is also the understanding which has attended both subsequent renewals.

3. Here again without an independent study I have to rely essentially upon the understanding of all concerned throughout the years. I would call to your attention the last sentence of Section 170(c) which provides that with respect to any facility for which a construction permit is issued before August 1, 1987, the requirements of this Section i.e. entering into an indemnification agreement, shall apply to any license issued for such facility subsequent to August 1, 1987. I do not know what purpose that particular provision would have except to provide specifically that where a construction permit is granted before August 1, 1987, and no operating license is issued until after August 1, 1987, that the indemnification agreement is required. I would also note that a similar provision was contained in the original Act.

Senator McClure's questions are less specific and so more difficult to answer quickly but, again, I will do my best.

1. I should preface my remarks by saying that no one can be entirely sure how the system would operate but one can make educated guesses on the basis of the way the system works or fails in non-catastrophic circumstances. Assuming a severe nuclear accident with extensive off-site damage and no Price-Anderson Act, it seems to me that plaintiffs would face a number of obstacles. The first hurdle would be establishing legal liability on somebody's part. It is likely that in the case of the operating utility a rule of strict liability would be in effect (although this has not yet been established). The problem would be that there is no assurance that the utility would be able to respond in damages. Presumably, since there is no requirement that they take out all available insurance, they would have some modest amount of insurance but nowhere near enough to cover the hypothesized damages. Since by definition the reactor would be essentially destroyed the utility would have a major share of its assets already lost. For some utilities bankruptcy would be inevitable and for most utilities bankruptcy would be a distinct possibility. In the event of bankruptcy it is not at all clear that the claims of bondholders would not take precedence over the claims of tort plaintiffs.

If the utility is not available as a financially responsible defendant, plaintiffs will have to look elsewhere. While the utility could be held strictly liable for damages caused by operation of the installation suppliers, even under very relaxed theories of strict product liability, can only be held liable if one could establish that they had done something wrong. This might be

literally impossible to do in the case of a reactor where the contamination from the serious accident might either destroy the evidence or make it impossible to get at for a period of years. In either event, potential plaintiffs would face a long uphill battle before they could establish liability much less collect. Moreover all of this is premised on the notion that you would have in the field entities which might be able to respond in substantial damages, General Electric and Westinghouse presumably the most prominent. Whether this would be the fact with no Price-Anderson is somewhat dubious; at least one would expect the industry to try to restrict liability to those assets devoted to the nuclear business.

So far as the ability of the tort system including insurance to handle catastrophic risks I think the short answer is that they work best in relatively small, relatively homogeneous types of accidents which can be handled either through insurance or provided for by resort to current income. When an accident exceeds the availability of insurance and threatens the ongoing life of the defendant you are almost inevitably forced into bankruptcy. Again this conclusion rests to some extent on speculation but if one looks at the history of catastrophic accidents and mass torts there is no reason for optimism that the system will work well.

A final comment in this respect is that judged as a system of compensation our tort system, even at its best, is ludicrously expensive. The most recent studies by the Institute for Civil Justice confirm the earlier studies and intuitive guesses that only a small fraction of the amount spent on the system actually reaches the persons injured.

2. My position in this question is necessarily intuitive rather than based on fact. From one point of view so long as there is no effort to finance the cost of a possible accident in advance -- as for example by insurance, setting aside reserves, etc., the problem is minimized. As I said, I have always believed strongly that one should not incur present costs to take care of an accident that may never happen. The question is what if any costs are incurred by the retrospective assessments. Here I have been told that the chief problem is the cost of money. Just as, in the case of insurance, the private insurers will not sell coverage of a vanishingly small risk for a vanishingly small premium, so too it is supposed that investors will add some kind of cost factor if the overall limit on liability is $60 million per reactor as opposed to five. Having said that I would have to admit that the ground is somewhat cut out from under me by the agreement of the utility witnesses that they can live with this amount. As a practical matter it probably does not amount to much given the fact that for the

foreseeable future there does not seem to be much interest in financing new nuclear powerplants.

3. I am not sure that insurance works any worse in connection with the regulated industry than in the case of a non-regulated industry. Provided that the rate setters are willing to allow insurance as cost it would work, I would think, pretty much the same way as an unregulated business. One caveat to that is that I think we are only beginning to understand the way insurance does or does not work. I think people have tended to assume that casualty insurance works pretty much the same way as life insurance and it is becoming abundantly clear that that is not true.

So far as catastrophic accidents are concerned I think insurance just is not geared to take care of them. Presumably, one would not continue to carry on a man-made activity if catastrophic accidents were frequent and predictable. If they are not predictable there is essentially no way that one can set a premium. The result is that either too much money is collected with whatever side effects that might have or too little. This is even more true in the case of liability insurance, when we did our original study in 1957. We looked at war risk insurance, federal deposit insurance, crop insurance, and the then proposed flood insurance program and concluded that none of them was the occasion for confidence about treating nuclear liability as an insurance problem. Insurance really only works well where the risks are relatively small compared to the system as a whole. Even in the case of deposit insurance we are now beginning to see strains on a system which appeared entirely sound for a long period of time.

4. I would have to defer to others on specific information about what is available. It is my understanding that the amount of insurance available to the nuclear industry is still relatively high. It is also my sense that in other industries people are only beginning to wake up to the nature of the problem. By and large, prior to the nuclear experience people tended not to pay very much attention to liability insurance. Product liability was essentially thrown in as part of the coverage of workers compensation and other insurance. Nuclear energy might have followed the same pattern but for the fact that at least at the outset nobody was at all sure that any money could be made in the business and everybody was sensitized by nuclear bombs to the enormity to a potential disaster. For whatever reason people did think in a nuclear context about the problem of catastrophic liability in a way in which they had not done so before. My sense is that as liability law changes and as courts seem more willing to fix liability for what were once thought to be the province of god that essentially the same kinds of problems will emerge. Indeed,

it seems clear in the area of mass torts that many people wish they had some elements of Price-Anderson in place before they got into trouble.

This is all very hurried and somewhat rambling but as I said at the outset I only received it this afternoon and did not want to delay my response.

Sincerely yours,

Arthur W. Murphy
Professor of Law

AWM/mr

Responses to Questions Addressed
To
Steve C. Griffith, Jr.
Senior Vice President & General Counsel
Duke Power Company
By
Senator Johnston

1. Q. What would be the impact of separating the two parts [licensee coverage under subsection 170.c and contractor coverage under subsection 170.d], renewing the contractor portion now, and leaving renewal for licensees for some future date?

A. Facilities that received construction permits prior to August 1, 1987 would continue to be covered for the licensed life of the facility, including any extensions or renewals of the operating license, through decommissioning, as more fully explained in the attached memorandum submitted in response to your question at the hearing on March 18, 1987. Thus, licensees would not be adversely affected if a bill extending the date in section 170.c were not enacted this year.

Q. What would be the impact of renewal of the Act with different liability limits for DOE contractors and NRC licensees?

A. Assuming that there were a rational basis for a distinction, there should be no legal impact. Given the Congressional pledge to provide full compensation despite the liability limit, there should be no problem with ultimate compensation for those incurring damages, even if there were a lower limit for one than the other.

2. Q. It is generally believed that Price Anderson coverage would continue for existing reactors, those with construction permits issued prior to August 1, 1987, for the term of their operating license, even if the Act were not renewed. Would this coverage continue if operating licenses are extended beyond their current expiration date? Is there any question of this interpretation? Would reactors be covered by Price Anderson during decommissioning under current law?

A. Yes, as to the first question. As our memorandum concludes, coverage continues for the licensed life of the facility, including renewals of the operating license, through decommissioning, at least until all

radioactive material has been removed from the site. As to the degree of uncertainty associated with the interpretation, it must be said that binding interpretations are made by the courts; lawyers simply try to forecast as best they can what a court would hold. The words of the statute -- "any license" -- are clear enough but very brief on the extension/renewal issue; they were evidently chosen to be as inclusive as possible. The construction of the statute as applying to amendments extending the term of the license or to renewals is necessary to give effect to the Congressional intent and to make sense of the situation that Congress sought to address and the result it sought to achieve in 1964. At that time, and until 1970, operating licenses were "provisional", of 18 months' duration. Congress intended in 1964 that coverage would continue for the licensed life of the facility, but it could not have so continued unless it applied to renewals of those eighteen-month licenses in the event the August 1, 1967 date was not extended.

3. Q. At the end of last year, there appeared to be general agreement that the Senate compromise worked out between our Committee and the Environment and Public Works Committee was a reasonable vehicle for renewal of the Price Anderson Act. Please tell us any problems you have with the provisions of that compromise. What should be done to fix any problems you have identified?

A. As discussed in my prepared testimony, the increase in retrospective premiums for each licensed reactor for any one nuclear incident from a maximum of $5 million to a maximum of $60 million is troublesome and could increase costs. We have testified that we can accept the very large increase in the retro so long as this amount is not the start of a new bargaining process to increase it to an even higher level. We would have preferred a lower figure, but can accept the $60 million maximum retro in order to permit passage of a bill that improves the present law and extends coverage to future plants. The lower figure would have had the advantage of allowing the Congress to intervene at a more reasonable level to substitute a more efficient compensation system for the costly tort system, while retaining a large pool of funds, available promptly, to cover immediate needs.

There were a number of technical points on which the bill could be improved that we have previously raised, but none that we would term "problems" with the compromise.

4. Q. Is the utility industry unified in support of the basic structure of the compromise worked our at the end of last year [Amendment 3238 to S. 1225]?

A. Yes.

5. Q. Please explain why the distinction between "extraordinary nuclear occurrences" and "nuclear incidents" is important. Please comment on the consequences of extending the waiver of defenses to all nuclear incidents, even if a utility were not in violation of federal regulations.

A. The waivers of defenses are triggered by a finding that a release is substantial enough to have caused offsite contamination and damage, termed an "extraordinary nuclear occurrence" ("ENO"). If the waiver of defenses were applied to all nuclear incidents, this would invite nuisance claims based on routine operation, including operation within regulatory limits. A nuclear incident (unlike an ENO) need not involve a release of radioactive material from its intended place of confinement and detectable offsite contamination or other objective evidence of damage. Abolishing the distinction and extending the waivers to any nuclear incident would also provide an additional strict liability remedy[1] to on-site workers, who already have a strict liability remedy in workers' compensation.[2]

1/ The waivers of defenses go far beyond strict liability. i.e., liability without fault: they require the waiver of certain statutes of limitations, assumption of the risk, charitable and governmental immunities, acts of God, and the doctrine of intervening or supervening causation (i.e., causation by a third party).

2/ Workers could simply name any plausible defendant other than their employer who would then be required to waive defenses, even though under otherwise applicable law, strict liability would not be appropriate. For example, there might have been no release of material from its intended place of confinement and no violation of exposure limits or other regulatory requirements. The defendant may have manufactured the component involved, but may have been in no way at fault for any exposure that occurred, and the claimant might have assumed the risk or have been contributorily negligent. Yet defenses or issues involving the plaintiff's negligence or assumption of the risk or the defendant's fault would be waived if the waivers applied to such a claim.

It does not seem wise or even reasonable to provide a strict liability remedy for radiation releases that may in fact be within radiation limits established by the NRC.

When the waiver of defenses amendments were adopted in 1966, the Congress recognized that to require the waivers to apply to any nuclear incident would be to invite frivolous or nuisance litigation. That was the basic reason for the "ENO" concept. The industry, including the insurers, were not willing to surrender their legal defenses except where there was some objective evidence that an identifiable and significant abnormal event had occurred. It would be unreasonable to expect industry and the insurers not to assert their customary defenses, nor to raise the jurisdictional issues which are waived in the event of an ENO with respect to claims that are based on no significant, identifiable release of radiation from the site or from a transporting vehicle and container.

6. Q. The environmentalists argue that the channeling of liability under the Price Anderson Act provides a disincentive for safety for contractors and suppliers because they are never held accountable, even for gross negligence. What mechanisms are there available to the NRC or to the utilities to provide an incentive for safety for contractors and suppliers? Isn't it true that in cases of gross negligence, anyone responsible would still be subject to criminal prosecution?

A. Please refer to my response to Senator McClure's question regarding accountability. It is quite incorrect that Price Anderson provides disincentives to safety. That would mean that the law rewards unsafe conduct. It certainly does not do that; even the waivers of defenses do not apply "to injury or damage to a claimant or to a claimant's property which is intentionally sustained by a claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant" (subsection 170.n(1). There is no "moral hazard"; loss of, or liability for damage to, the reactor and other on-site property is excluded from Price Anderson.

Price Anderson is not intended to supply safety incentives over and above those that already exist, although the potential liability for deferred premiums does add even greater importance to effective industry

self-policing activities, such as those of INPO. All large power reactor licensees would share in the liability costs if a major accident occurred at any one licensee's plant. Last year's proposed compromise would make this effect even more pronounced. The very substantial retrospective premium calls would mean that the best-operated plant is a hostage to the worst, giving every nuclear utility a strong economic incentive to see that all reactors are operated safely.

Price Anderson is not intended to be a regulatory or enforcement tool. There is no evidence that we know of that people who have liability insurance have a worse safety record than the uninsured. One would not expect the record of insured drivers to be worse than that of uninsured motorists, for example. In fact, statutory requirements for liability insurance are commonplace.

Liability insurance generally makes no distinction between degrees of negligence. Gross negligence these days is garden-variety negligence with a pejorative adjective attached.

As I pointed out in my response to Senator McClure, NSSS vendors, architect-engineers, constructors and other suppliers have a very substantial stake in the safe operation of nuclear power plants which they helped design, construct or maintain. Not only would a substantial accident traceable to their activities have a major impact on professional reputations and standing, it would almost certainly affect future sales of goods and services to the utility industry, and could subject suppliers to actions by utilities or others for claims not covered by Price Anderson, such as loss of on-site property, coverage for which is excluded from Price Anderson and normally governed by contract.[3] Vendors and other suppliers are subject to Section 206 of the Energy Reorganization Act of 1974, violation of which carries with it the liability for civil penalties prescribed in Section 234 of the Atomic Energy Act. Subsection 223.b of the Atomic Energy Act (as amended by Public Law 96-295) extends the criminal penalty provisions of the Act to any director, officer, or

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3/ Though typical such contracts exclude or limit liability for on-site damage, as permitted by nuclear property insurance policies, the scope and application of such contractual provisions have not been fully litigated.

employee of a firm constructing or supplying components for a utilization facility who by act or omission willfully and knowingly violates any section of the Act or any NRC regulation, order or license condition that results in significant impairment of a basic safety component. Price Anderson does not provide insurance for these or other applicable civil penalties or criminal fines.

7. Q. Please comment on s. 44., the Price Anderson proposal introduced by Senator Daniel Moynihan. In particular, comment on the provisions that would reduce retrospective premiums for the "best" utility performers and increase premiums for the "worst" utility performers. Would a mechanism such as this provide an incentive for safety? What kind of impact would this mechanism have on the omnibus features of Price Anderson?

A. We are opposed to S. 44. The bill would repeal any aggregate limitation on liability, providing only an annual limit on the rate of collections of retrospective premiums. It thus does violence to the fundamental structure of Price Anderson in reliance on which many billions of dollars in investments have been made. It would also attempt to use Price Anderson as a device to punish "poor" performance and reward "good" performance through differences in retrospective premiums. As discussed above in response to your question 6., Price Anderson is a system to deliver compensation, not regulate safety.

Neither the NRC nor the industry -- including its insurers -- have a sufficient grasp of reliable indicators of accident potential to permit confident assessment of the "best" and "worst" performers for this purpose. Criteria or ratings developed for other purposes are not necessarily good predictors of initiating events, for example. Present underwriting differences reflect mainly differences in size or site characteristics.

Those who focus on nuclear regulation through tort law seem to forget that we have erected the most comprehensive and complex regulatory system in the world at great expense to taxpayers and consumers. Our traditional legal processes were developed for unregulated conduct. Price And[illegible]son uses tort liability merely as the vehicle for compe[illegible]ation. In this

context, liability, especially strict liability, does not necessarily have all of the traditional trappings of guilt and punishment.

Under Price Anderson, the person (or persons) liable under the omnibus definition of the insured serves merely as a conduit for the direct payment to claimants of primary and secondary insurance proceeds. Attempting to use this same system simultaneously to provide safety incentives through variations in retrospective insurance premiums is like basing final class standing on entrance examinations; it elevates prediction over what actually happens. It would make more sense to charge the company that had the accident a larger retro -- if it was at fault -- but if the accident is large enough that the secondary level is reached, that company would most likely be insolvent. It will have substantial costs not covered by insurance for property damage and replacement power. It will have difficulty obtaining credit. Nothing prevents the NRC from leveling substantial civil penalties on, or the Attorney General pursuing criminal enforcement of, the person or persons responsible for an accident, or on any other poor performer before an accident. Thus, there is no need to add a premium penalty (which cannot be accurately and fairly determined) on a licensee who may have had nothing to do with the accident and may have already paid a penalty or had its license suspended or revoked. Punishment and regulation of conduct should be left to the appropriate regulatory and enforcement mechanisms.

We have not seen any evidence of deficiencies that would require changes, such as the wholesale restructuring proposed in S. 44. The bill would effectively destroy the intricate, carefully balanced, workable and societally desirable system of public compensation and economic efficiency achieved in the existing Price Anderson law. Like the now-abandoned 1983 NRC proposal for assessments for an indefinite period, S. 44 would make licensees insurers without limit and without just compensation. The policy of Price Anderson has always been and should continue to be to assure speedy satisfaction of legitimate claims. Proposals to remove the limit on liability would not only breach the agreement between government and industry in reliance on which huge investments have been made, it would in fact penalize the industry for carrying out the task Congress solicited it to undertake.

8. Q. Would jury trials be possible for incidents covered under the Price Anderson Act?

A. Yes. Price Anderson does not create a separate remedy or rules of procedure for tort litigation, but requires insurance or provides indemnity, as the case may be. It generally leaves the substance and procedure for establishing recoveries to applicable state law, except as modified by the waivers of defenses.

9. Q. What is the average annual premium paid by utilities for private insurance? What are the high and low premiums?

A. We are in the process of obtaining the information needed to respond, and will supplement this answer when it is received.

9. Q. What is the average annual premium paid by utilities for private insurance? What are the high and low premiums?

A. We are advised by the nuclear insurance pools that, for single reactor sites or the largest unit at a multi-unit site, annual nuclear liability insurance premiums (i.e. for the prepaid, primary layer of financial protection under Price Anderson) average about $600 thousand for the unit, while the high is about $1.2 million and the low is about $400 thousand.

For multiunit sites, the average is about $850 thousand per site, with the high about $1.8 million and the low about $570 thousand.

Responses to Questions Addressed
To
Steve C. Griffith, Jr.
Senior Vice President & General Counsel
Duke Power Company
By
Senator McClure

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1. Q. Do you think that the nuclear industry is held sufficiently accountable for its activities? Could you explain how the activities of the NRC, INPO, and other institutions serve to promote and enhance the safety of nuclear power plants?

A. The Price Anderson system is not intended to, and should not be used to, hold the nuclear industry accountable for its activities. The Price Anderson system is intended to deliver compensation for legitimate claims in the unlikely event of a nuclear accident having substantial off-site consequences. The tort system is merely a vehicle for delivering that compensation.

Price Anderson does, however, have the effect of requiring all large power reactor licensees to share in the costs of a major accident at any one licensee's plant. Last year's proposed compromise would make this effect even more pronounced. The very substantial retrospective premium calls would mean that the best-operated plant is a hostage to the worst, giving every nuclear utility a strong economic incentive to see that all reactors are operated safely.

Congress has already provided both civil and criminal penalties in the Atomic Energy Act as well as a comprehensive licensing and regulatory scheme. It is to this complex of provisions that attention should be directed when the question is raised whether a culpable party can escape being punished or made an example of for compromising the public health or safety.

In addition to statutory and regulatory systems which provide safety assurance and incentives, there are ample economic, personal and professional incentives to assure safety on an individual, a corporate, and an industry-wide basis. The nature of nuclear accidents involving substantial releases that might affect the persons or property off-site is that any such accident would almost inevitably involve enormous damage to the facility itself. In addition to direct physical damage,

substantial costs would likely be incurred for decontamination and perhaps other measures necessary to contain radioactive material to the site.

Further, as Duke Power Company predicted in testimony before the U.S. District Court in 1976, and as the Three Mile Island Unit 2 accident confirms, very substantial additional expenses would be incurred for energy purchases to make up for the loss of the unit in which the accident occurred and shut-down of other similar units on the same site. Depending on the circumstances, similar units on the same utility system and possibly even on other systems might also be shut down. If economic considerations seem an especially credible incentive, one need look no further for that incentive than the huge financial stake that the owners and operators of nuclear plants have in safe, reliable operation.

At an individual level, plant employees and managers generally have homes and families, friends and neighbors near the nuclear unit. The incentive to act carefully and responsibly arising from this factor is probably more powerful than any notion of corporate economic health.

NSSS vendors, architects, engineers, constructors and other suppliers have a very substantial stake in the safe operation of nuclear power plants which they helped design, construct or maintain. Not only would a substantial accident traceable to their activities have a major impact on professional reputations and standing, it would almost certainly affect future sales of goods and services to the utility industry, and could subject suppliers to claims by utilities or others for claims not covered by Price Anderson, such as loss of on-site property.

Although liability for damage to on-site property is normally limited by contractual arrangements between the utility and the vendor or supplier, as permitted by nuclear property insurance policies, the extent to which such contractual provisions provide complete protection has not been fully litigated. These vendors, architect engineers, constructors and other suppliers are of course subject to the reporting obligations -- and substantial civil penalties for their violation -- under Section 206 of the Energy Reorganization Act of 1974 and 10 CFR Part 21.

Insofar as the activities of the NRC are concerned, the main reason for the NRC's existence is to assure the public health and safety through a comprehensive system of licensing, regulation, inspection and enforcement. Each nuclear utility licensee is held strictly accountable for compliance with applicable regulations by the NRC. The NRC has an extensive inspection and enforcement program to ensure that its regulations are met, and has full authority to take whatever action may be deemed necessary for protection of the public health and safety, including orders for plant shutdown or license revocation.

The Institute of Nuclear Power Operations sets standards of excellence above and beyond the minimum essential requirements contained in the NRC's regulations, and all INPO members are expected to be, and have been, responsive to INPO's guidance. Special procedures are in place to provide INPO with guidance in the event that a utility member is not responsive, which ultimately could result in a decision to suspend the utility from INPO membership. This undoubtedly would have major impact on the utility's standing with the NRC, with its peers, with its insurers, and in the financial markets.

In addition, nuclear utilities are subject to inspections directly by their insurers. These inspections cover areas such as pressure vessels, fire protection, and various plant machinery. Both property and liability coverage may be suspended if conditions are unsatisfactory.

2. Q. It was largely due to the efforts of the nuclear utilities that we were able to phase out government indemnity of nuclear utilities, by replacing this indemnity with the pooled "retrospective-premium" system that was added to Price Anderson in 1975. This was a significant change to the Price Anderson scheme, and it represents a willingness on the part of utilities to contribute substantial amounts of money to pay for claims arising from an accident for which they had no direct responsibility.

Now there is a point at which this willingness to share responsibility for someone else's misfortune might break down. Where do you think this breaking point might occur? Is there some point at which Duke Power would say "enough is enough"?

A. As has been mentioned in testimony before this and other Congressional committees over the last three years, there is a point at which it is unreasonable to expect licensees to act as insurers without compensation and without limit for other licensees. There is no formula that we know of that would yield a satisfactory answer under all circumstances for all utilities (which have diverse forms of ownership and financial structures ranging from federal agencies to large and small investor owned utilities, to state and municipal utilities and rural electric cooperatives) .

It is our belief that most utilities could meet an assessment roughly double that under present law. The yearend compromise bill in the last session, Amendment 3238 to S. 1225, would have set a $12 million annual ceiling per licensed reactor on collections of deferred premiums. Most utilities should be able to meet that for a few years in good times, that is, depending upon economic and regulatory conditions and where a given company is in the construction cycle. But $60 million per licensed reactor, even spread out over five years, is a whopping sum even for a large utility like Duke Power because we have multiple units, seven in all, of which we own five outright. Utilities depend on credit, and in a post-accident economic environment, nuclear utilities may have grave difficulty obtaining credit. We have testified in the past that $10 million per nuclear incident per licensed reactor is about the most that can be fairly expected of licensees in no way responsible for an accident.

The industry is now willing to accept a $60 million standard deferred premium, subject to a $10 or $12 million annual limit, but it would be desirable to recognize that economic conditions can vary over time by authorizing the NRC to defer collection of the full premium in any case in which financial hardship would result, and use the borrowing authority provided by the bill to bridge any gap between deferred premium collections and claims. We are already in a situation, at $60 million per reactor, where an unprecedented burden has been placed on an industry to act as an uncompensated insurer, and I do not think more can or should be expected.

3a. Q. What would be the effect of imposing strict, unlimited liability on nuclear plants, especially as to the impact this would have on the investment community, the insurance market, the stockholders, and the consumers?

A. It is our understanding, confirmed by correspondence addressed to the House Interior Committee, that the investment community would not react favorably to repeal of limitation on liability or the imposition of unlimited retrospective premium assessments on nuclear plant owners, and that in all likelihood either measure would increase the cost of capital to a utility. Since the cost of capital is typically one of the largest, if not the largest, cost to an electric utility it would increase the cost of service and the required return on equity, thereby increasing the price of electricity to consumers. This would occur because of the perception of financial risk to investors and hence an additional reward would be demanded, even though it is extremely unlikely that such cost would ever be incurred because the possibility of an accident with major off-site consequences remains extremely small.

Because changing the present system to provide either unlimited liability or unlimited assessments would destroy economic channeling of liability costs, either measure could be expected to lower the nuclear liability policy limits available to any one named insured. This is because vendors, service organizations, and other suppliers would demand separate coverage for their own exposure while the insurers would seek to limit their risk at any one nuclear site to present levels, which means that the sum of the policy limits in each of those separate policies would not exceed the present "omnibus" policy. Funds to pay claims would, however, likely be less because not all insureds would necessarily be liable.

3b. Q. What would an unlimited liability scheme do to the pooling concept? Would utilities still be willing to contribute on an annual basis for an unlimited number of years to pay for someone else's accident?

A. Much of what has been said in response to Question 3a. is equally applicable to proposals such as you describe. The channeling of liability and its benefits would break down. In answer to the specific question in the second sentence, utilities would not be willing to make retrospective premium payments for an unlimited number of years even if the annual installment were limited to the present $5 million, much less the proposed $10 million.

4. Q. Some people believe that the current limitation on liability in Price Anderson is a disincentive to safety. Do you agree?

A. Limitation on liability is no more a disincentive to safety than liability insurance itself or the corporate form of doing business. If limitation on liability were a disincentive to safety, then all corporations (which have limited liability by virtue of being such) would have such disincentive. So also would: (a) medical doctors and hospitals, because they have limitations on liability in many jurisdictions, (b) the many governmental institutions that have immunity from tort liability, (c) employers, because workers' compensation claims are limited to a schedule of benefits, and (d) shipowners, whose liability is limited by federal law to the post-accident value of the vessel and pending freight. The argument about limitation on liability and safety incentives is essentially the same pre-Victorian argument that was made against liability insurance but has long been rejected by legal scholars, legislatures and courts.

As we mentioned in response to the first question, the proper places to look for incentives to safety are in the personal, professional, and economic self interest of the owner and supplier organizations and their employees, in industry self-policing activities and, lastly but not least, in licensing, regulation, inspections, and enforcement programs of governmental authorities, including the possibility of civil or criminal sanctions for serious violations. As we stated in response to question 1, Price Anderson is intended to deliver compensation, not to punish putative wrongdoers. To attempt to use it to do both is likely to lead to compromising the compensation objective, placing unfair burdens on the innocent (both industry and public) and providing a legacy for generations of lawyers.

5. Q. Under the present law and current insurance policies, how are the costs of investigation and settlement of claims covered? If such coverage were excluded from within the liability limit, who would wind up paying for these costs?

A. Under the present statutory provisions governing primary and secondary financial protection, and under the respective policies of insurance implementing those provisions, as well as under the limitation on liability in Section 170.e, the cost of investigating and settling or defending claims is counted toward both policy limits and the liability limit. The nuclear insurance pools administer both the primary and secondary layers of insurance. Their administration and the fact that they

handle both layers, is a very efficient arrangement, but it is doubtful that it could be preserved if defense costs were required to be eliminated from the policy or included, but covered without limit, as we explain below.

Historically, many liability policies obliged the insurer to defend a single named insured in addition to paying on behalf of the insured judgments or settlements up to a stated policy limit. But that is a very different matter from a policy written on an "omnibus" basis, under which the insurers could be required to defend hundreds of defendants in many separate courts.

Moreover, we are advised that the trend in liability insurance is to include such costs in policy limits as has always been done with nuclear liability insurance. Directors' and Officers' liability insurance, pollution coverage, and professional liability insurance are examples.

There is no more reason to exclude defense costs than there is to limit contingent fees on the part of plaintiffs' counsel. In fact, given the waivers of defenses, there is more reason to limit contingent fees. But neither plaintiffs' nor defendants' costs should be excluded so long as we are locked into the traditional adversarial system.

The insurers cannot reasonably be expected to undertake to defend anyone and everyone against whom a claim might be brought without some kind of limit. It might be supposed that the insurance pools could simply reduce the primary policy limits to leave a margin for claims expense, but they would probably still lose many, if not all, of their members. Eliminating the costs of investigating, settling, and defending claims would thus mean that the insurers drop out. The member insurers have subscribed only for a fraction of a fixed amount, not an open-ended obligation. Your question rightly asks "who would wind up paying for these costs?"

Either the licensee that had the accident would be asked to act as an insurer for all defendants' defense costs, or no one would have defense coverage even against frivolous claims. A licensee certainly cannot be expected to insure the whole world against defense costs. Indeed, a licensee would be unwilling to do this when you

take the risk-spreading mechanism away from him [1] -- one that he has already paid for in the case of reported claims and those incurred but not reported -- but in the case of a very large accident, the licensee would be insolvent and could not honor any such obligation.

Not only would the nuclear liability insurance pools lose capacity in the primary layer, they would almost certainly have to withdraw from administering the secondary layer. The same problems arise when you exclude this coverage from retrospective premiums as with primary coverage. Who pays? Who runs the system? No practical way has yet been identified to provide claims expense coverage for the secondary layer, with or without the pools, if it cannot be charged to the secondary policy limit (the sum of retrospective premiums due).

It is unfair and unwise to deprive insureds of coverage for their most fundamental exposure -- the costs of investigating and settling what appear to be meritorious claims and defending those that do not appear to have merit. And if the concern is that there may not be enough money to go around, it is unnecessary to exclude coverage for the vast majority of potential accidents -- those in which claims and defense costs would be amply covered by the policy.

It is unnecessary to exclude such costs even for accidents that exceed the liability limit, since Congress has the right to enact a revenue measure applicable, inter alia, to licensees, in order to reimburse the Treasury for any expenditures it may make above that limit.

It is worth noting that if one is concerned about the transaction costs of the tort system getting out of hand, then the thing to do is set the limit high enough to provide for immediate needs but low enough that Congress can intervene and provide an expedited administrative remedy and tax whomever is appropriate -- including licensees -- to reimburse the Treasury.

Under the present system, the insurers control the purse strings for defense of anyone who may be liable. It was possible to arrange defense of the TMI-2 claims through a

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1/ Which raises constitutional questions, as discussed below.

single law firm. That would be difficult if not impossible if defense were not included in the policy. And multiple representation and the creation of adversary relationships among defendants and between them and both insurers and the NRC would impair the prospects for timely settlements and restrict the free flow of information.

Moreover, so long as Congress remains committed to the tort system, there is going to have to be a mechanism to cover the associated costs. Indeed, it might be that failing to provide defense coverage could create what professors of insurance like to call a "moral hazard". There might be the temptation on the part of defendants who are covered for claims but not defense to settle all of them at the asking price.

In other words, the existing system allows for an adequate defense, and assuring an adequate defense makes it more likely that funds will go to those with valid claims as Congress intended and are not used up to settle or default on nuisance claims to avoid investigation and defense costs, since someone else has to pay them.

Such a measure would also be of doubtful constitutionality. It does not appear that coverage for defense costs could be made unlimited or repealed. Some rights to defense coverage have become vested, such as claims already reported, including TMI-2 claims, and those already incurred but not yet reported. Moreover, the indemnity agreements which set forth the mutual obligations of licensees and the government and accept listed financial protection policies that include defense costs as required by law are contracts of the United States.

Congress may not take vested property rights without just compensation, nor may it abrogate the Federal government's contracts. See, e.g., Lynch v. United States, 292 U.S. 571 (1934) (Justice Brandeis held that Congress may not repeal the statutory basis for valid insurance contracts between the United States and private parties, because the rights under such contracts are vested and protected against taking without just compensation by the Fifth Amendment.) 292 U.S. at 579-80.[2]

2/ Lynch was followed in the well-known state law impairment-of-contract case: United States Trust Co. v. New Jersey, 431 U.S. 1 (1977).

It would in any event be unjust to leave a licensee with responsibility for paying the costs of investigating and settling or defending claims against all other defendants on an omnibus basis in an unlimited amount. It would be unfair also to impose such a substantial expense retroactively on non-licensees who might be named as defendants. Under present or prior law, such parties have had no reason to include such risks in their pricing or set up reserves for dealing with them.

In summary, the statute has always required insurance for defense costs as a part of financial protection. That coverage is essential in any liability policy, and especially so in this unique example of universal coverage. We do not know any feasible way to make the system work unless defense costs continue to be covered. The costs of investigating, settling, and defending suits for damages are a necessary corollary of Price Anderson's requirement -- and one of its keystones -- that nuclear liability insurance cover anyone who may be liable.

— M. G. Johnson —

Senator Johnston's Questions

1. Why should we limit liability in the case of contractors indemnified by the Federal Government?

-- Don't we intend to have full compensation for victims of accidents where Federal activities are involved?

-- If so, why not just say that liability will be unlimited up front?

-- In effect, the Federal Government self insures, and we will pay all the legitimate damages. So why do we have all the fuss about limiting liability that just suggests we don't really intend to pay damages?

ANSWER: From a contractor point of view, as long as indemnity is coextensive with the liability of a contractor, and it is made clear that the indemnity will be the sole source of funds to pay claims, it would not make any difference what the limit on liability would be. In this case it should be remembered that all adjudicated claims would be the obligation of the federal government. The third subpart of the question (unlimited liability) is well taken; however, it should be noted that the limit on liability was an original part of the overall plan which applied to all cases under Price-Anderson.

2. Why should contractors that are willfully negligent or grossly negligent be indemnified?

-- If we indemnify contractors in these circumstances, where is the incentive for safe operation of the facilities?

-- Isn't it true that DOE has no authority to levy civil fines on contractors no matter how unsafe their operations are?

-- Shouldn't DOE have that authority?

-- If not, why not?

-- What other tools are available for DOE to discipline its contractors?

ANSWER: With regard to the subquestion concerning the fact that DOE has no independent regulatory authority to assess civil penalties on contractors, there are a number of nonadjudicatory but effective administrative mechanisms whereby performance of DOE contractors is monitored and evaluated. First, the past performance of contractors is generally considered in the context of the procurement process. Second, DOE has traditionally utilized an "award fee system" where the size of the award a contractor receives for performance of its contractual obligations is in direct proportion to the contractor's performance record. Under existing law, in cases of poor or unacceptable contractor performance, DOE can withhold the entire award fee or terminate the contract altogether.

Getting DOE into the business of assessing civil penalties, even for gross negligence or willful misconduct, establishes a regulatory-litigative framework that will be expensive, difficult to administer, cumbersome, lengthy and time consuming. The mere

existence of such a system might well serve as a disincentive for contractors to offer their expertise and needed services to DOE. This is especially true as the size of the contractor or subcontractor diminishes.

Of all the bills that consider the extension of Price-Anderson during the 99th Congress, only S.1225 as reported by the Senate Energy and Natural Resources Committee included the provision relating to the establishment of imposition of civil penalties by the Secretary of Energy on DOE contractors (H.R. 3653, the Fuqua bill, contained a provision that the need for civil penalties be studied). Under that Bill, the Secretary of Energy would be granted the sole discretion to determine, subsequent to a nuclear incident, whether the proximate cause of the incident was the gross negligence or willful misconduct on the part of a contractor, subcontractor or supplier. This, at best, would initiate a cumbersome three- or four-step procedure whereby the Secretary would make an initial determination as to whether a hearing was required to determine the cause of the nuclear incident, and whether that cause was attributable to gross negligence or willful misconduct on the part of the contractor. Second, once such a decision was made, the Bill called for a mandatory hearing before an Administrative Law Judge to determine liability, if any, based upon causation. Third, assuming that such liability were established, there would next have to be a determination of the extent to which the

contractor's gross negligence or willful misconduct caused damages or injuries resulting from the incident. Finally, any such penalty assessed could be appealed by the contractor to the U.S. Court of Appeals. Secondly, it would be anticipated that there could be legal challenges to such procedures. In addition, there is the matter of costs associated with DOE obtaining the expertise to conduct and adjudicate the litigation contemplated by such a proposal.

3. The argument is made that any change in the provisions of existing law that would allow subrogation or that would eliminate coverage for gross negligence would create a situation where nuclear contractors would refuse to do business with the Department of Energy. Please explain this argument as explicitly and succinctly as possible.

-- What evidence do you have that this would drive contractors away?

ANSWER: If coverage for gross negligence were eliminated, prospective contractors would initially have to seek insurance protection against such liability. If such insurance were to be available on the market, the cost of that insurance would be added to the contract costs for the government. If such insurance were not available, the prospective contractor would have to evaluate its risk versus potential reward under the contract to determine whether to bid for the work.

As an additional part of the evaluation of risk of liability versus reward under the contract, the contractor would have to evaluate the tort law in force in the states affected by the proposed activity. This would be an effort to determine what tort law would apply in the event of an injury to a member of the public, the definition of "gross negligence" under that law, and the judicial procedures involved in jury trials within those jurisdictions. The question of a contractor subjecting oneself to the vagaries of jury determinations and the shifting concepts of negligence law becomes one of predictability. Under the current state of the law, it is almost impossible to predict with

any degree of certainty what behavior will be determined by a jury to constitute "gross negligence" as opposed to simple negligence. That uncertainty might well lead a contractor to decide not to bid for this type of work.

Evidence in support of this situation is available in the form of decisions made by contractors to not bid on clean up work relative to toxic and hazardous materials under Superfund legislation, because there they are similarly held liable for gross negligence. A number of firms have made corporate decisions to not propose on clean up contracts under Superfund legislation for this reason. There is an understandable reluctance by such firms to publicize these corporate decisions for a variety of public relations reasons.

4. S.1225, as reported by the Energy and Natural Resources Committee in the 99th Congress, would authorize the Department of Energy to levy civil penalties on contractors in cases of gross negligence. The argument has been made that subcontractors and suppliers might not be able to respond to such civil penalties.

-- Please comment on this.

ANSWER: As explained in response to question 2, the creation of a quasi-judicial, adversarial relationship between DOE and its contractors would greatly increase the costs of doing business with DOE and add substantial disincentives for contractors to continue to provide supplies and services in this area. The creation of an adjudicatory civil penalty process would work the greatest hardship on the specialized subcontractors and suppliers, who because of their size and staffing, may find the proposed civil penalty system and process a controlling disincentive. It should not be forgotten that many of such "contractors" are specialized suppliers, i.e., small businesses. Whatever the size of the contractor, it must be able to establish a reasonable relationship between the potential gain and the potential loss, or the contractor will not be able to remain in business for long.

The "award fee system" described in the response to Question 2 provides an effective mechanism for DOE to monitor and assess the performance of the contractors. Adding a complex quasi-adjudicatory process would provide substantial disincentives to current DOE contractors. Finally, it should be noted that the civil penalty system described in S.1225 as reported by the

Energy and Natural Resources Committee of the 99th Congress was inconsistent with the civil penalty system utilized by the Nuclear Regulatory Commission, where penalties relate to the nature of the noncompliance (and past performance), not the damages alleged to have occurred by the noncompliance.

5. Please comment on the significance of the distinction between "extraordinary nuclear occurrences" and "nuclear incidents."

-- Please comment on the consequences of extending the waiver of defenses to all nuclear incidents.

ANSWER: Basically, an "extraordinary nuclear occurrence" under current NRC regulations and current DOE regulations is determined when the following two tests have been met:

1. Where there has been a substantial discharge of radioactive material or substantial radiation levels offsite, and

2. Whether the event has resulted, or will probably result, in substantial damages to persons or property offsite. See 10 C.F.R. §§ 140.83 - 140.85. (NRC regulations) and 10 C.F.R. Part 840 (DOE regulations).

Although the term "nuclear incident" is not expressly defined in NRC or DOE Regulations, that term is defined in section 11q. of the Atomic Energy Act of 1954, as amended, as "any occurrence, including an extraordinary nuclear occurrence within the United States causing . . . bodily injury, sickness, disease or death, or loss of or damage to property, or loss of use of property arising out of or resulting from the radioactive, toxic, explosive, or hazardous properties of source, special nuclear, or byproduct material . . ." (emphasis added). Although current NRC and DOE regulations do not redefine or describe a "nuclear incident," those Regulations contemplate a nuclear incident as something that does not meet the express criteria of an "extraordinary nuclear occurrence."

As to the question of whether the waiver of defenses should be extended to all "nuclear incidents" as opposed to "extraordinary nuclear occurrences," this is also addressed in current NRC and DOE Regulations. Pursuant to 10 C.F.R. § 140.81(b)(4) and 10 C.F.R. § 840.1(b)(4), if there has not been an "extraordinary nuclear occurrence" determination, the claimant must proceed (in the absence of settlement) with a tort action subject to whatever issues must be met and whatever defenses are available to the defendant under applicable law. If there has been an "extraordinary nuclear occurrence" determination, the claimant must still proceed with a tort action, but the claimant's burden is substantially eased by the elimination of certain issues which may be involved and certain defenses which under the statute are waived. Such waivers include issues or defenses as to conduct of the claimant or fault of persons indemnified, any issue or defense as to charitable or governmental immunity, and any issue or defense based on the statute of limitations if the suit is instituted within three years from the date on which the claimant first knew, or reasonably could have known, that the injury or damage had occurred. In addition, as pointed out in NUREG-0957, "The Price-Anderson Debate -- The Third Decade" by the NRC in its report to Congress, when the waiver of defenses provisions of the insurance policies and indemnity agreements making up the Price-Anderson system are activated, this results in an essentially "no fault" recovery system. The history of Price-Anderson does not

support the extension or implementation of such a "no fault" system in the absence of the determination of an "extraordinary nuclear occurrence." While the Price-Anderson Act was not intended to disturb traditional tort law as administered and adjudicated by individual States, the "extraordinary nuclear occurrence" provision was designed to secure uniformity of administration of claims, under state tort law in the event of a significant nuclear incident. Such uniformity of administration of claims under such a circumstance directly benefits the public and greatly facilitates the uniform administration of claims.

Finally, many nuclear incident claims arise out of employees at operating plants who allege injury as a result of exposure to radiation. While Workers Compensation laws preclude suits against their employers, such employees can and do sue other contractors at the facility under state tort law. If the waiver of defenses theory were broadened beyond "extraordinary nuclear occurrences," plaintiffs would be relieved of the requirement to prove that their injuries were the result of contributory negligence of the defendant and the defendants would be barred from defending on the grounds of contributory negligence on the part of plaintiffs. A flood of litigation would thus be anticipated.

6. As you know, the bill I have introduced addresses only the DOE contractor portion of the Price-Anderson Act.

-- What would be the impact of separating the two parts, renewing the contractor portion now, and leaving renewal for NRC licensees for some future date?

-- What would be the impact of renewal of the Act with different liability limits for DOE contractors and NRC licensees?

ANSWER: It is not necessary but desirable to have a comprehensive bill addressing the extension of both §170(c) and 170(d). Such treatment would be consistent with historical action by Congress in twice extending Price-Anderson in 1966 and 1975. This uniformity of treatment is desirable to maintain and enhance the application of Price-Anderson to commercial nuclear power plants and the nuclear activities of the Department of Energy. The industry supports such a comprehensive bill. However, there is no fundamental reason why the contractor provisions could not be extended now with renewal of licensee provisions reserved for a later date. As to different liability limits, that has in fact been the law since financial protection required of licensees exceeded $500 million.

7. Has the uncertainty over renewal of the Price-Anderson Act had an adverse effect on any ongoing negotiations between contractors and DOE?

-- What effects? Please give examples.

ANSWER: As a result of the uncertainty over the renewal of Price-Anderson, in some cases DOE has been reluctant to reference or include any reference to government indemnity payments in excess of $500 million under the current and expiring law. This has understandably caused a substantial disincentive with regard to some contracts expected to be signed prior to August 1, 1987. Thus, contractors currently negotiating and executing contracts with DOE could be placed in a position where there is a substantial gap between the amount of their indemnity and their liability, unless the indemnity is increased to an amount commensurate with the new liability limit. This problem is also created both for existing and previously completed contracts. The answer to this dilemma is to have authorized indemnity retroactively made co-extensive with any increase in liability, and that this be accomplished on a self-executing basis.

8. Please tell us any problems you have [with] the provisions of the compromise worked out at the end of last year between our Committee and the Environment and Public Works Committee.

-- What should be done to fix any problems you have identified?

ANSWER: Because of the ongoing nature of the activities engaged in by government contractors engaged in nuclear activities, any increases in coverage should be made retroactive to such continuing activities. The absence of such retroactivity could create unnecessary uncertainty as time goes on. (See also answer to question 7.) Second, the Bill creates the possibility that a claim could be reduced to judgment before funds are made available from the Federal Government. If DOE indemnification is assured, the public would be benefitted by assuring that such indemnification was present.

9. In testimony provided for the March 18 hearing, witnesses representing the environmental community cited legislation in the 99th Congress that included an exemption from federal indemnity for Department of Defense contractors guilty of gross negligence (the so-called Grassley bill, S.1254).

-- Is the comparison made to the Price-Anderson Act valid? Why or why not?

-- Should a similar exclusion for incidents resulting from gross negligence be included in Price-Anderson?

-- If not, why not?

ANSWER: The comparison of the provisions of the Grassley bill, S.1254 to Price-Anderson is not valid. Department of Defense contracting activities do not generally invoke the nuclear exclusion provision in contractors' General Liability and Indemnity Insurance policies, as occurs in DOE nuclear contract matters. Secondly, as a general matter, the nature and size of potential claims are substantially greater for DOE nuclear contractors.

An exclusion for gross negligence would not be appropriate under the Price-Anderson Act for the reasons stated in response to Question 2.

10. Please explain the difference between the Price-Anderson Act and other federal laws that exempt coverage for gross negligence.

ANSWER: While there are a number of other federal laws providing liability limitation,[1/] it is uncommon to find exclusions for gross negligence. The key point, however, is that most, if not all, of such other liabilities are insurable under the contractor's General Liability and Indemnity Insurance policies. Nuclear liability is specifically excluded from such policies, thereby necessitating Price-Anderson coverage.

1/ For example, section 204 of the Trans-Alaska Pipeline (TAP) Authorization Act, 43 U.S.C. §1653, stipulates that the liability of the pipeline right-of-way holder to injured parties is limited to $50 million of strict liability, with further liability to be established under ordinary rules of negligence. The liability of a vessel carrying TAP oil for injuries and clean up costs is capped at $14 million of strict liability. The Tap fund covers the next $86 million of damage awards, also with strict liability.

11. How are DOE's relationships with its contractors different from relationships between other federal agencies and their contractors?

ANSWER: As explained in response to question 9, there are two basic differences between DOE's relationship with its contractors as contrasted with the relationships between other federal agencies and their contractors. First, because of the nature of the work and the structure of the program, DOE's supervision of operating contracts is much more "hands-on" than is generally found elsewhere. Secondly, DOE personnel have the special expertise that is contemplated by the Price-Anderson Act to actively manage and supervise such contracts. The "award fee" system explained in detail in response to Question 2 is an example of such management and supervision.

12. Witnesses have testified that expiration of the Price-Anderson Act would cause contractors to shy away from doing business with the Department of Energy because of the potential for being subjected to unlimited liability without Price-Anderson coverage.

-- Isn't a more likely scenario, however, that DOE would strive to maintain its contractors and provide indemnity under its General Contracting Authority in Public Law 85-804?

-- What type of protection would be provided for the public using PL 85-804?

-- Would it be possible to indemnify all contractors and subcontractors?

ANSWER: Indemnification under DOE's General Contracting Authority under Public Law 85-804 is "expressly subject to the availability of appropriated funds." 48 C.F.R. § 950.7011. It thus provides no umbrella protection and DOE contractors could therefore be subjected to unlimited liability without Price-Anderson coverage. Moreover, implementation of Public Law 85-804 is contingent upon a prior express finding by the Secretary of Energy based upon submittals by the "Heads of Contracting Agencies." Under Public Law 85-804, claims would be processed under state tort law without the benefits contained in Price-Anderson such as waiver of defenses, consolidation of claims channelling, and an extended statute of limitations. It is thus difficult to predict what courses of action and conclusions would be reached as a result of the above-described processes. Given such uncertainty, expiration of Price-Anderson could cause qualified contractors to avoid participating in DOE contracts because of the potential for being subjected to unlimited liability without Price-Anderson coverage.

Moreover, DOE has noted that approximately 78,000 suppliers have been covered by Price-Anderson. If Public Law 85-804 were to be utilized, that would mean 78,000 separate indemnities. Finally, without the omnibus coverage of Price-Anderson, victims would not be compensated under PL 85-804 if a nuclear accident resulted from the activities of lower-tier contractors or suppliers who had not been specifically indemnified.

Senator McClure's Questions

1. Would contractors continue to perform nuclear research for the Federal Government if Price-Anderson were not renewed?

Let us assume that Price-Anderson were allowed to expire and that various companies were considering contracting with DOE even without Price-Anderson. Knowing that they would be exposing themselves to limitless liability, isn't it likely that the strongest companies, and therefore the ones with the most assets to lose, would shy away from DOE contracts, and that the smaller, and most likely less experienced, less qualified companies -- but with less assets to lose -- would step in to fill the gap? Couldn't we then find ourselves in a situation at DOE very similar to what we are now seeing happening with hazardous waste cleanup under Superfund? That is, the qualified companies will not risk their company's assets to the unknown liability associated with these cleanup activities, and so we find ourselves in a situation where the only companies foolish enough to go for the Superfund contracts are those that have very little to lose anyway (some people call their kind of operations "fly-by-night"). Could this conceivably happen with DOE contracts if we didn't indemnify the contractors against liability?

ANSWER: The scenario described in the question is very possible and is clearly not in the public interest. Moreover, it should be noted that by far the great majority of contractors covered by Price-Anderson are not construction, engineering or operating contractors, but are suppliers of components of nuclear facilities. Many of these components are sold primarily to private businesses, not government nuclear facilities. Piping, valves, switches, motors, etc., are used in far greater quantity by industry than by nuclear facilities. Why should a supplier risk the unlimited liability when only a small share of his business is nuclear related?

2. Should DOE contractors be required to purchase insurance from the private nuclear pools? Why or why not?

ANSWER: Taxpayers could object to this, as it would constitute an excess and unnecessary cost to DOE. Moreover, it is questionable as to how much, if any, such commercial nuclear liability insurance would be available for government nuclear contractors.

3. Do contractors have any incentive to operate safely and to perform under high standards of excellence?

ANSWER: It should be noted that Price-Anderson indemnity is applicable only to nuclear liability and does not therefore apply to nonnuclear liability. Even with Price-Anderson, there are substantial and significant incentives for safety. Failure to perform to high standards of safety exposes the contractor to substantial penalties, both tangible and intangible including loss of award fees, diminished reputation, and eligibility to do business.

4. Do you feel that DOE indemnification should be made mandatory rather than discretionary? Is there any instance where DOE has not indemnified its contractor for nuclear-related work?

ANSWER: Mandatory coverage would ensure that victims would be compensated and that qualified contractors would be available. Few, if any, government contractors have the assets to respond to multi-billion dollar judgments and many of the suppliers are small businesses with no significant assets.

Therefore, if one of such contractors were responsible for the incident there would be no significant recovery by the victims.

As to any specific instances where DOE has not indemnified its contractor for nuclear-related work, any such information should be available from DOE.

QUESTION FOR MR. JOHNSON

From Senator Metzenbaum

1. Are you aware of any contractor, subcontractor or supplier engaged in an ultrahazardous activity who has been able to obtain insurance (other than Price-Anderson Act coverage) against damages arising from their own: a) gross negligence; b) willful misconduct, and c) bad faith?

   If so, please identify the company, the insurer, the nature of the activity covered, and the annual premium.

The entire Price-Anderson program was conceived and developed to provide an "insurance" type protection for industry and to guarantee a system to provide prompt payment to legitimately injured parties in the extremely remote case of a very significant nuclear incident.

While the probability of such an incident was perceived in 1957 (and is still so perceived today) to be extremely remote, and probably so remote as to defy all normal statistical methods of predictability, the resulting consequences were then and are now estimated to be of a magnitude incapable of reliable prediction but of such magnitude that industry and normal commercial insurers could not reasonably underwrite them; and such as to assure that payment to legitimate victims would be delayed for many years and in almost every case would eventually be paid only in part due to the limited resources of the party or parties that might be found legally liable under our tort system

To remove this unacceptable burden from industry and to remove the uncertainty of reasonable recovery for the potentially injured public, the Price-Anderson program has been developed over the years to provide a single umbrella of "insurance"

protection for industry and a guaranteed source of funds for payment to victims without going through the uncertainties of the normal tort system.

Funds for payment of claims come from two sources within the statutory limitation - the utility industry for licensed activities and the Department of Energy for contractor activities; and from the Federal government for any provable damages in excess of the statutory limitation.

To remove any part of the liability exposure from this umbrella of protection would cause the system to fail, even if one is only considering the removal of coverage for gross negligence. Conflicts would be established between potential defendants and between defendants and insurers or the Department of Energy, creating an enormous increase in transaction costs and extended delays in payments to victims.

It would also have a negative impact upon utilities, contractors, subcontractors, suppliers, sub-suppliers, etc, in their decision to participate or not in the nuclear business. Such an exclusion would do nothing but make the remote probability of being liable for a major nuclear incident even more remote, but would not change anything else in the risk-benefit ratio which dictated that special liability arrangements were necessary and proper for the already very remote risk of severe losses in the nuclear business.

Such an exclusion of coverage would also have a negative impact on the potential victims of a major nuclear incident.

Unless liability is clearly covered under the Price-Anderson "umbrella", potential claimants could be faced with all of the roadblocks to prompt recovery inherent in our tort system and would also be faced with the real probability of actual funds not being available to satisfy judgments depending upon the financial condition of the liable party or parties.

The Price-Anderson "umbrella" of coverage replaces liability insurance coverage normally purchased by entities engaged in other non-nuclear activities, and provides such coverage through the nuclear insurance syndicates in the licensee area and through the DOE indemnity in the contractor area.

While virtually all commercial liability insurance policies exclude coverage for major nuclear risks and for most toxic pollution exposures, they do not distinguish between degrees of negligence or fault that might create liability on the part of the insured. Such policies, whether insuring ultrahazardous contractor activities or insuring such mundane risks as personal automobile or homeowner's exposures, are written to insure against "legal liability" for "damages" resulting from "personal injury or property damage" from an occurrence or accident covered by the insurance policy.

The "legal liability" covered under such policies could stem from principles of absolute liability, strict liability, simple negligence, gross negligence, wilful misconduct, bad faith or any other theory of liability alleged by the plaintiff and imposed by law, whether common or statutory, federal or state.

Normal policies do not contain, nor do we know of any policies that contain any exclusion of coverage for gross negligence, wilful misconduct or bad faith. Such an exclusion could, of course, be negotiated on an individual basis although we know of no such cases. As a general rule an insurer will either underwrite or refuse to underwrite an insured's liability for the covered risks, but virtually never would attempt to separate various bases of legally imposed liability so as to afford coverage on one basis such as simple negligence and exclude coverage for another basis such as gross negligence. Such a separation would be as unacceptable to the insured as the insurer and we doubt that there are any insurance policies written on such a basis.

In today's litigious and adversarial society, one can predict with almost certainty that a plaintiff's law suit will include allegations of several bases of liability, including allegations of gross negligence, and more and more frequently will include demand for punitive damages. It is the extremely unusual case that ultimately and clearly identifies the actual basis of liability, especially in settled cases and even in the relatively few cases that do go to formal adjudication.

To exclude coverage for gross negligence in a personal automobile liability policy would make such a policy almost worthless to the insured driver in a case of a serious accident and would be of little solace to the injured victim seeking reasonably prompt payment for his damages. The same would be

true for contractors engaged in other ultrahazardous activities whether in the commercial or government field of activities. Where government contracts require underlying insurance in areas where indemnity is extended, to the best of our knowledge all such policies purchased by contractors and approved by the concerned government department or agency contain no exclusion of coverage for claims based in whole or in part upon gross negligence, wilful misconduct or bad faith.

Although DOE and the AEC in the past, under Price-Anderson, have significantly reduced government costs by not requiring underlying insurance or financial protection for perfectly valid reasons, including the extremely remote probability of loss and the desire of the government to control all claims to maintain consistency of treatment of claimants and to avoid adverse precedents, any insurance required would provide coverage for legal liability whether based on simple or gross negligence or other theories of liability.

For this reason, and other reasons stated above, it is our very strong recommendation that there should be no changes made in the current indemnity and financial protection requirements of Price-Anderson which provide coverage for "public liability" regardless of the basis of such liability. We feel quite strongly that any such change would be detrimental to the government's desire to maintain a full availability of private contractors for critical government programs and would also circumvent the other key provisions of Price-Anderson to assure

prompt payment to claimants and to guarantee a valid source of funds for such payments.

ENVIRONMENTAL POLICY INSTITUTE

March 30, 1987

Chairman J. Bennett Johnston
Committee on Energy & Natural Resources
U.S. Senate
Washington, D.C. 20510

Dear Senator Johnston:

I would like to thank you again for inviting me to participate in the March 18 Senate Energy Committee hearing on the Price-Anderson Act. Attached are my responses to your follow-up questions. I hope that these responses will be helpful to you, and the Committee, as you begin mark-up of S.748. If I can be of any further assistance, please let me know.

Sincerely,

Keiki Kehoe
Washington Representative

218 D Street, S.E., Washington, D.C. 20003 (202) 544-2600

1. The environmentalists argue that the government indemnity for DOE contractors in the Price-Anderson system is bad because there is no contractor accountability. The contractors, however, tell us that the provisions of Price-Anderson are necessary for contractors to continue to do business with the federal government.

--Are you concerned at all that if the contractors are correct, then top quality contractors will no longer do business with the Department and we will be left with second string contractors? What impact would that have on the safety of DOE operations?

--Wouldn't contractors who were grossly negligent be subject to criminal prosecution? Wouldn't this provide an incentive for safety?

1. While we are aware of the contractors arguments, we are not convinced that an accountability mechanism would prevent them from continuing to do business with the government. As pointed out in our testimony on pages 3-6, thousands of other federal contractors are willing to do business with the government even when they are exposed to potential liability. In fact, many of the contractors currently involved in nuclear activities were willing to participate in nuclear programs under pre-1957 indemnity agreements that would have exposed them to liability for gross negligence, bad faith and willful misconduct. If these companies were willing to accept nuclear contracts under those conditions thirty years ago, they should be willing to do so today.

We believe that your concern about "top quality" contractors is valid. However, we interpret the problem differently. We do not believe that any contractor that insists on full indemnification for accidents that result from the contractor's own gross negligence or intentional misconduct should be considered "top quality."

If the nuclear contractors currently employed by the DOE refuse to continue if they are not guaranteed complete financial immunity from the consequences of their own gross negligence or intentional misconduct, this is a shocking state of affairs that warrants thorough Congressional scrutiny.

It is incumbent upon Congress to spend the taxpayer's money wisely. We do not believe that employing contractors who insist on indemnity for gross negligence or intentional misconduct is a wise use of tax dollars. Taxpayers should not be asked to subsidize the gross negligence of federal contractors. Furthermore, if Congress is concerned about the safety of the government's nuclear activities, we believe that it is absolutely essential that contractors be held to a standard of accountability.

It is not clear to what extent, and under what circumstances, federal contractors would be subject to criminal penalties. We do not believe that the government should have to prove criminal intent in order to penalize a grossly negligent contractor. Again, as pointed out in our testimony, the standard of "gross negligence or willful misconduct" is commonly used in other federal indemnity agreements and should be viewed as a bare minimum for nuclear contractors.

2. Please describe in further detail the so-called Grassley bill, S. 1254, and its relevance to debate over extension of the Price-Anderson Act.

--What is the level of exposure that is at issue for federal contractors that would be indemnified under the Grassley bill?

--Isn't it true that what you are insuring against in the Grassley bill is a much smaller exposure than the billions of dollars of exposure that would result from a catastrophic nuclear accident covered by the Price-Anderson Act?

2. The Grassley bill (S. 1254), which was introduced during the 99th Congress, provided federal indemnity for contractors involved in ultrahazardous activities. Under this bill, federal indemnification was proposed above and beyond the amount of protection available through commercial insurance markets.

The level of potential contractor exposure that was contemplated by the authors of the Grassley bill was, like Price-Anderson, potentially limitless. Federal contractors involved in DOD, FAA, NASA and other ultrahazardous activities face potential liabilities that could bankrupt even a large corporation. Coverage under the Grassley bill specifically included "ultrahazardous and nuclear" activities, therefore the potential liabilities could be at a comparable level to those indemnified under Price-Anderson.

APPENDIX II

Additional Material Submitted for the Record

CHAIRMAN

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 2, 1987

The Honorable J. Bennett Johnston, Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, D. C. 20510

Dear Mr. Chairman:

I am pleased to respond to your request for the Commission's written testimony on the need for extension of the Price-Anderson Act in general, and on S. 748, a bill to extend the Price-Anderson Act as it pertains to contractors of the Department of Energy. A legal opinion, prepared by our General Counsel, on the situation that would arise should the Price-Anderson Act not be extended beyond August 1, 1987, is also enclosed.

Commissioner Asselstine did not participate in this response. Commissioner Bernthal was not available to participate.

Sincerely,

Thomas M. Roberts
Acting Chairman

Enclosures:
1. Testimony
2. Opinion

cc: Senator James A. McClure

ENCLOSURE 1

STATEMENT OF

U.S. NUCLEAR REGULATORY COMMISSION

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

CONCERNING THE

PRICE-ANDERSON ACT

AND

S. 748

The Commission would like to emphasize at the outset that the NRC's primary concern is the public health and safety. Our efforts are directed to preventing accidents and ensuring the safe use of nuclear power. Our agency's mission is not primarily to evaluate the financial ability of utilities to participate in arrangements such as those established by the Price-Anderson Act. Nonetheless, while our overriding interest is that the plants be operated safely, we wish to work with you to assure that in the event of a significant release of radiation the public would be promptly and adequately compensated for losses suffered.

As you know, when the Price-Anderson Act became law in 1957, it had two basic objectives:

First, to ensure that adequate funds would be available to the public to satisfy liability claims in the event of a catastrophic nuclear accident; and

Second, to remove the deterrent to private sector participation in atomic energy presented by the threat of potentially enormous liability in the event of such an accident.

The Commission believes that even with the passage of time and the successful history of operation of over 100 nuclear power plants in the United States, these two basic objectives are still important to maintaining the nuclear power option which has been established by the Congress for our country. While we continue to believe that the possibility of a catastrophic nuclear accident in the United States is very small, if there were to be such an accident, comprehensive, prompt and equitable settlement of public liability claims must be assured. Consistent with this goal, any modification of this legislation must be undertaken cautiously lest it unwittingly upset the delicate balance of obligations between operators of nuclear facilities and the U.S. Government as representative of the people. We believe it is important to keep in mind that the purpose of this legislation is to serve the American people by achieving two goals -- preserving an energy option recognized by the Congress as important to the nation and assuring prompt payment of claims in the event of a nuclear accident. We should continually ask the question -- are these goals for the American people being served? -- as we review the various provisions of this legislation.

Background

Before expressing our requested views on the need to extend the Price-Anderson Act and on S. 748, the Commission would like to describe the Price-Anderson Act in general to set the framework for the discussion to follow.

The Price-Anderson Act was initially enacted for a 10-year period, but was extended and amended in 1965 and 1975 and will expire on August 1, 1987 without Congressional action.

Licensees of large commercial nuclear power plants must provide proof to the NRC that they have the maximum amount of private nuclear liability insurance -- generally referred to as financial protection -- that is available. That financial protection, currently $700 million, consists of a primary layer of nuclear liability insurance of $160 million and a secondary retrospective premium insurance layer. This secondary layer works in the following way. In the event of a nuclear accident causing damages exceeding $160 million, the licensees of each commercial nuclear power plant would be assessed a prorated share of damages in excess of the primary insurance layer up to $5 million per reactor per incident. With 108 large commercial reactors under this system today, the secondary insurance layer totals up to $540 million.

The Price-Anderson Act authorizes the Commission to enter into indemnity agreements with reactor licensees. These agreements specify the amount of financial protection, if any, required of licensees. The agreements also specify the obligation of the Federal Government to provide funds when a nuclear accident exhausts private liability insurance or when no private liability insurance is required, such as with small university test reactors. This government obligation to provide funds is called "government indemnity."

The Price-Anderson Act places a ceiling on the total amount of public liability in an accident. This ceiling, or "limit of liability," for large commercial nuclear power plant licensees is currently tied to the maximum

amount of insurance available through private sources. For many years, the limit of liability was $560 million. Congress provided that the limitation on liability would grow, once the total protection of the primary and secondary layers of insurance reached and passed $560 million. In November 1982, the $560 million level was reached and the government's indemnity was, as a practical matter, essentially eliminated for large reactors. The present limit of $700 million will continue to increase in increments of $5 million for each new commercial reactor licensed to operate.

Congressional Activity in 1986

The Congress recognized that the Price-Anderson Act would expire by its own terms on August 1, 1987. Thus both the House and the Senate began in 1986 actively to consider the terms by which the Act should be extended. Clearly the limitation on liability was the most difficult and controversial issue associated with extending the Act. Although agreement on the limitation on liability was never reached in 1986, out of the debate it became clear that there was a strong consensus to favor a change in the structure of the liability limit, though there was considerable support for some form of a limitation on liability. S. 1225, introduced in the last Congress by Senators Simpson and McClure, and reported by the Senate Committee on Energy and Natural Resources, contributed substantially to the consideration of the need to extend Price-Anderson in the 99th Congress.

The Commission was called upon last year to present to the Congress its views on the various Price-Anderson bills that were under consideration, and in particular on the liability limit. The Commission's position then, as now,

recognized that, as in most legislation, a balancing of equities must be made by the Congress and that various alternatives, based on different balances, might provide adequate assurance that all public liability claims could be paid. In that context, a majority of Commissioners favored Price-Anderson Act extension amendments that would provide for a substantially greater liability for reactor licensees than is provided by current law but would retain the concept that any such liability would be bounded by a predetermined cap or cutoff.

The Commission's Views

The Commission supports the extension of the Price-Anderson Act. The Commission's primary goals for financial protection of the public are to assure prompt and full payment for public losses. In particular, we favor an increase in annual retrospective premium for nuclear power reactors, but retention of some large ceiling on liability for any nuclear incident. We also favor explicit provisions calling for Congress to act in the event that an accident results in damages in excess of the liability limit.

As noted earlier, the financial side of nuclear power operation is not the Commission's primary expertise. Accordingly, we do not take a position on the precise dollar amount of retrospective premiums that should be required from reactor licensees. While past staff work has indicated that utilities will probably be able to pay an annual assessment of around $10 million, such as was suggested in the 99th Congress, and is currently suggested in H.R. 1414, introduced recently in the 100th Congress by Congressmen Udall and Sharp, such a collection would be an extraordinary undertaking. Consideration of such an

undertaking should be mindful that the contemplated collection could well take place in an atmosphere of impaired utility earnings resulting from the ramifications of the accident itself. The Commission has no special foresight as to the burden on the industry in such an atmosphere. If there is to be such a large annual assessment, it would be useful if the annual assessment is expressed on a per reactor basis, rather than on a per reactor-per incident basis. Alternatively, the Commission could be authorized to provide limited relief from the obligation to meet the full annual retrospective premium in the case of multiple incidents in any year or where a utility is licensed to operate more than one facility.

The Commission continues to support legislation that would prohibit the payment of punitive damages from federal or Price-Anderson funds. The Commission would not bar the assessment of punitive damages, where appropriate, against a liable party.

The Commission supports inclusion of precautionary evacuations under Price-Anderson coverage where such evacuations are compensable under state tort law and are ordered by authorized state or local officials.

The Commission has consistently supported a recommendation that the Congress extend the statute of limitations for filing a public liability claim arising from a nuclear accident from 20 years to 30 years. This extension is recommended in order to provide greater assurance that latent injuries caused by a nuclear accident are provided protection under the Price-Anderson system. The Commission continues to support an increase to 30 years from the current 20-year period in which those indemnified waive a right to plead any state

statute of limitations. The inherent difficulties in proving that latent injuries were caused by the nuclear accident and not by some other factor or combination of factors appear to us to argue for some final cutoff to initiation of claims once a generous allowance has been made for accommodating the discovery of those injuries.

S. 748

S. 748, introduced by Senators Johnston, McClure, and Domenici, would extend and revise the Price-Anderson Act, as it pertains to Department of Energy contractors, for twenty years. The Commission generally defers to the Department of Energy (DOE) on the need to revise and extend the Act for DOE contractors. However, the Commission believes that it is important for a system to be in place to provide for public compensation for nuclear accidents at a DOE waste repository licensed by the Commission that is at least as generous as the system that applies to nuclear power reactors. Since it has been generally understood that such a system could appropriately be provided by "contractor" Price-Anderson provisions administered by DOE, we would favor an extension and revision of the "contractor" Price-Anderson provisions so that this system could be in place.

Finally, while we understand the special concerns of DOE and its contractors that "contractor" Price-Anderson be extended, we would much prefer a comprehensive extension and revision of Price-Anderson, which includes NRC licensees, if that is at all possible before the Act is slated to expire on August 1.

ENCLOSURE 2

COVERAGE OF CURRENT LICENSEES
UNDER THE PRICE-ANDERSON ACT IF THE ACT IS NOT EXTENDED

Set forth below is an analysis prepared by the NRC Office of the General Counsel of the coverage of current NRC licensees under the Price-Anderson Act ("Act") should the expiring provisions of that Act not be extended beyond August 1, 1987.

I. Significance of the August 1, 1987 Date in Section 170c

The provisions of the Act applicable to most licensees contain only one expiration date.[1] That date, August 1, 1987, is found only in section 170c, which provides as follows:

> The Commission shall, with respect to licenses issued between August 30, 1954, and August 1, 1987, for which it requires financial protection of less than $560,000,000, agree to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability arising from nuclear incidents which is in excess of the level of financial protection required of the licensee....

The other provisions of the Act, including the provisions authorizing and requiring financial protection (sections 170a and 170b), limiting liability (section 170e) and waiving defenses (section 170n), do not contain any express expiration date.

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[1] An expiration date appears also in section 170k, which will be discussed separately.

While the applicability of the section 170e liability limitation is confined to "persons indemnified," thereby suggesting a necessary correlation with indemnity agreements under section 170c, the term "person indemnified" is broadly defined in section 11t to include not only "the person with whom an indemnity agreement is executed," but also anyone "who is required to maintain financial protection, and any other person who may be liable for public liability." Accordingly, the issue arises whether some or all of the provisions of the Act other than section 170c continue in effect beyond August 1, 1987, even if section 170c is allowed to expire.

For the reasons set forth below, a careful analysis of the Act's language and legislative history shows that the provisions of the Act are not severable, and that if the date in section 170c is not extended, other provisions in the Act, including those requiring financial protection, limiting liability, and waiving defenses, expire along with section 170c.

A. Before 1975 All of the Act's Provisions Were Expressly and Inextricably Interconnected

Prior to enactment of Public Law 94-197 in 1975, section 170c provided as follows:

> The Commission shall, with respect to licenses issued between August 30, 1954, and August 1, 1977, for which it requires financial protection agree to indemnify and hold harmless the licensee and other persons indemnified, as their interest may appear, from public liability arising from nuclear incidents which

> is in excess of the level of financial protection required of the licensee.... [Emphasis added.]

At the same time, section 170a provided that:

> Each license issued under section 103 or 104 and each construction permit issued under section 185 shall ... have as a condition of the license a requirement that the licensee have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with section 170 b. to cover public liability claims. Whenever such financial protection is required, it shall be a further condition of the license that the licensee execute and maintain an indemnification agreement in accordance with subsection 170 c. ... [Emphasis added.]

Accordingly, before 1975 there was an inextricable connection between financial protection and an indemnity agreement -- it was not possible to have one without the other. Thus, if the authority to indemnify expired, then the authority to require financial protection must be regarded as having expired as well.[2] Also, the waivers of defenses would expire because they were, as now, tied to the existence of either financial protection or an indemnity agreement.[3] Finally, while the liability limitation was then, as now, expressed in terms of "persons indemnified,"

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[2]The only other possible reading, that the authority to issue licenses expired, cannot be sustained since there is absolutely no support in the Act's legislative history for such a drastic proposition.

[3]Section 170n provides in pertinent part that "the Commission may incorporate provisions in indemnity agreements with licensees and contractors under this section, and may require provisions to be incorporated in insurance policies or contracts furnished as proof of financial protection, which waive ...."

that term was then defined as "the person with whom an indemnity agreement is executed and any other person who may be liable for public liability." This definition made no sense without an indemnity agreement, for without one the definition degenerated into the strange phrase "other person who may be liable ...." The term "other" in the definition clearly implied a connection between "persons indemnified," and thus the liability limitation, and an indemnity agreement.

Thus, before 1975 when the Act was last extended and modified, sections 170a, 170b, 170c, 170e, and 170n were all expressly and inextricably intertwined -- if the authority to indemnify in section 170c expired, then the other provisions expired as well.

B. Nothing in Public Law 94-197 (1975) Changed the Concept that the Act Continued or Expired as a Whole.

In 1975, with the enactment of Public Law 94-197, the Act was extended and modified to include a new layer of financial protection and an eventual phasing-out of indemnity. The phasing-out of indemnity, which was to occur as the secondary financial protection layer exceeded $560 million, required conforming changes to section 170a, section 170c, and section 11t. Section 170a was changed so that indemnity "may," rather than "shall," be a license condition if financial protection is required. Section 170c was amended to state that indemnity agreements were required only for licenses "for which it [NRC]

requires financial protection of less than $560,000,000." And the definition of "persons indemnified" in section 11t was amended to add a person "who is required to maintain financial protection."

These conforming changes had the effect -- which the below analysis will show was unintended -- of eliminating the essential interrelation of sections 170a, 170b, 170c, 170e, and 170n which had heretofore been explicitly expressed in the language of the Price-Anderson Act and therefore giving the appearance that these various provisions could be read and could stand separate of each other. This is because once financial protection exceeded $560 million, an indemnity agreement was no longer required and, under amended 170a, financial protection could exist as a separate license condition without indemnity.[4] And, so long as financial protection was required, the new definition of "person indemnified" still made sense. Thus, it became possible to read the Act as if the financial protection provisions in section 170a and b, the liability limitation in section 170e, and the waiver of defense provision in section 170n, all had vitality separate from section 170c.

---

[4]Prior to the 1975 amendment, the limit of liability was $560 million of which not more than $500 million could be covered by an indemnity agreement. The 1975 amendment had an objective of getting the government out of the indemnity business prospectively once the financial protection reached and exceeded $560 million. Thus, the need for the conforming changes in the sections of the Price-Anderson Act.

That this reading was not intended is clear from the legislative history. First, there is no indication in the 1975 Act's legislative history that the pre-1975 concept that the Act expired as a whole was intended to be changed by the 1975 law. Given the careful attention to detail in the legislative history, especially in the Joint Committee's reports, there would certainly have been some discussion of such a basic change in concept if a change was intended.

Second, the 1975 legislative history shows clearly that Congress was treating the Act as a whole, to be extended only as a whole. E.g., S.Rep. No. 94-454, 94th Cong., 1st Sess., at 2 ("the Act is scheduled to expire on August 1, 1977"), 1 ("the bill meets the need by extending the Price-Anderson Act for an additional 10 years"), 7-8 (conclusion that if the Act expired, there would be no waivers of defenses or limitation on liability.).

Finally, a proposal by Congressman McCormick during the recorded open markup session to make the Act permanent was withdrawn after it encountered opposition from those who preferred a fixed expiration date. In its place, language was added to the Joint Committee report that:

> The Joint Committee wishes to stress that there are a number of features of the Price-Anderson Act which should be viewed as permanent. These include the mandatory insurance coverage, the no-fault provisions, the provisions for consolidation of claims in a single federal court and for advance payment of claims, the

> contractor indemnity provisions, and the mandatory retrospective premium system. These elements make up a pattern of public protection which must be continued. The provision for termination in 1987 should be viewed as a device to ensure that Congress will reassess the situation prior to that time and make revisions as required, rather than as congressional intent to provide for an eventual termination of the federal regulation of nuclear liability insurance. S.Rep. No. 94-454, 94th Cong., 1 Sess., at 9.

The intent behind this Report language was clear: "[i]t's not binding if it's in the Report. It's merely an expression of a 1975 Congress talking to a 1985 Congress, only making a suggestion." "Open Markup of H.R. 8631 and S. 2568: Price Anderson Act Amendments", Meeting of the Joint Committee on Atomic Energy, 94th Cong., 1st Sess. at 47-49.

Congressman McCormick's proposal, which was in effect rejected on its merits, presumed that the Act must continue or expire as a whole. A different construction of the Act, which would allow portions of the Act relating to such things as liability limitation to continue for licenses issued beyond 1977, would be inconsistent with the Joint Committee's rejection of McCormick's proposal.

II. Effect of a Non-Extension on Power Reactor and Other Facility Licensees

As shown above, the Act must be construed as a whole. Thus, if the authority to indemnify expires, then the remainder of the Act, including the limitation on liability, authorization to

require financial protection to satisfy liability claims, and waivers of defenses, expires as well. However, the expiration date of August 1, 1987 is expressed in terms of future licenses. As to facility licenses issued before that date the language of section 170c of the Act is clear:

> With respect to any production or utilization facility for which a construction permit is issued between August 30, 1954, and August 1, 1987, the requirements of this subsection shall apply to any license issued for such facility subsequent to August 1, 1987.

Thus, without an extension of the Act, the existing provisions of the Act continue unaffected for all power reactors and other facilities which received construction permits before August 1, 1987. It would seem that renewals of operating licenses would also be covered by the Act, so long as the original construction permit was issued prior to August 1, 1987. But, for plants which receive construction permits after August 1, 1987, the Price-Anderson Act would not apply. This means, among other things, that NRC could not require liability insurance or waiver of defenses, and there would be unlimited liability.

III. Effect of a Non-Extension on Non-Profit Reactors

Section 170k of the Act provides as follows:

> With respect to any license issued pursuant to section 53, 63, 81, 104a., or 104c. for the conduct of educational activities to a person found by the Commission to be a nonprofit educational institution, the Commission shall exempt such licensee from the financial protection requirement of subsection 170a.

> With respect to licenses issued between August 30, 1954, and August 1, 1987, for which the Commission grants such exemption:
>
> > (1) the Commission shall agree to indemnify and hold harmless the licensee and other persons indemnified, as their interests may appear, from public liability in excess of $250,000 arising from nuclear incidents. The aggregate indemnity for all persons indemnified in connection with each nuclear incident shall not exceed $500,000,000, excluding cost of investigating and settling claims and defending suits for damage:
> >
> > * * * * *
>
> Any licensee may waive an exemption to which it is entitled under this subsection. With respect to any production or utilization facility for which a construction permit is issued between August 30, 1954, and August 1, 1987, the requirements of this subsection shall apply to any license issued for such facility subsequent to August 1, 1987. [Emphasis added.]

As can be seen from the text, the ambiguity created by the text of the 1975 law does not extend to certain non-profit educational and research licenses. Similar to the case prior to 1975 for power reactors, for these licenses indemnification is mandatory. Since there is no financial protection, if there can be no indemnity there can be no waiver of defenses and the definition of "persons indemnified" becomes meaningless. Thus the law itself is quite clear that the Act as a whole does not apply to any non-profit educational and research licenses issued after August 1, 1987. As was the case for power reactors, operating licenses and renewals of operating licenses for reactors subject to 170k would be subject to the Act so long as the original construction permit was issued prior to August 1, 1987.

IV. Effect of Non-Extension on Other Licenses

The effect of a non-extension of the Act on materials licenses issued under sections 53, 63, or 81, is similar to the effect on power reactors and section 170k reactors. The Act expires as a whole. Thus no materials licenses issued after August 1, 1987 could have Price-Anderson Act protection. It is not clear whether renewals of licenses after this date, where the original licenses issued before the date, would or would not be covered.

UNITED STATES SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES

STATEMENT OF THE

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ON

REAUTHORIZATION AND EXTENSION OF THE PRICE-ANDERSON ACT

MARCH 18, 1987

Statement of the
National Association of Regulatory Utility Commissioners
on
Reauthorization and Extension of the
Price-Anderson Act

This statement is submitted for the record to the Senate Committee on Energy and Natural Resources on behalf of the National Association of Regulatory Utility Commissioners (NARUC).

The NARUC is a quasi-governmental, nonprofit organization founded in 1889. Within our membership are the governmental agencies of the fifty States, the District of Columbia, Puerto Rico and the Virgin Islands which are engaged in the regulation of utilities and carriers. Our chief objective is to serve the consumer interest by seeking to improve the quality and effectiveness of government regulation in America.

The Association greatly appreciates this opportunity to make its views known on reauthorization and extension of the Price-Anderson Act. NARUC believes that the Price-Anderson Act should be renewed but in amended form. It is our conclusion that the existing nuclear power plants have, by and large, served the nation's consumers well. To the extent that Price-Anderson assures compensation of accident victims beyond the operations of private insurance and the capability of individual power plant owners, it is an important public safeguard. It is our conclusion, that substantial modification is necessary for Price-Anderson to play this role today.

The official position of the NARUC on the renewal of the Price-Anderson Act is set forth in the attached Resolution, which was unanimously adopted by the Executive Committee in July 1985

after considerable debate and revision before the Nuclear Issues Subcommittee, the Committee on Electricity and the Executive Committee of the NARUC.

Given that background and its ultimate unanimity in adoption by an extraordinary diverse body, we think that you will find the Resolution to be an exceptionally clear statement embracing some significant principles. Nevertheless, we would like to indicate at the outset that there is not unanimity within NARUC as to the nature of the upper limit on liability that is recommended. No one favors continuation of the present Price-Anderson limits, and, in light of the Chernobyl nuclear accident, views regarding desirable revised limits range from lows in the 5-6 billion dollar range to endorsement of the 1983 NRC Report to Congress which provides for annual limits on a per reactor basis but no overall limit on recovery. The strong consensus is in favor of an upper limit on the total liability of the nuclear industry, based on a current estimate of the costs of a major accident.

We believe that the best way to convey our views to the committee is to explain our Resolution.

The first "whereas" clause is a factual statement. It is included to address the argument that any major changes to Price-Anderson would somehow change the rule in midstream. The fact is that the Act has been changed significantly before and that those relying on it have always known that it was subject to a top-to-bottom review every 10 years. The retrospective premium feature itself was inserted for the first time in the 1975 renewal.

The second and fourth clauses are self-explanatory.

The third clause emphasizes that Price-Anderson should not be treated as an abstract exercise. We should note, however, that the phrase severe core-melt accident does not, as Three Mile Island (TMI) showed, automatically lead to the release of lethal quantities of radiation.

The fifth clause states a principle that NARUC has endorsed in many contexts. It is relevant to Price-Anderson because the current law, limiting liability to some $600 million, shifts the risk of a larger accident out of the price of electricity and onto either the potential victims or the U.S. taxpayer, depending on what Congress does after such an accident. A realistic limit on liability would be reflected in the cost of capital to nuclear utilities and therefore the cost of nuclear generation. It would not make a big difference on a per kilowatt hour basis, but the principle is important to sensible longrun energy policy.

It is fair to ask why companies with nuclear power plants that did not experience the accident should pay anything toward the consequences. Aren't they as blameless as all taxpayers? There are two answers: First, they are all underinsured. The principle of meeting this shortfall through an industry-wide pool is already recognized in Price-Anderson (and in other industries such as marine transport). The nuclear companies are each other's insurers, and the point that they are blameless after an accident at someone else's plant is of not more weight here than it would be if Lloyd's of London said that it shouldn't pay

because it didn't cause its client to have an accident. Second, as noted above, this approach makes economic sense because it assures that future decisions to build plants will be made with this risk exposure in mind. If the exposure above a low limit is to be laid off on all taxpayers, then each new plant decision will be made as if the exposure above that limit did not exist at all.

Having said this, we should acknowledge that some NARUC members do favor lower limits along the lines of 5-6 billion. They would defend this choice by saying that nuclear power's safety record to date gives them confidence that the lower limits are adequate and that higher limits would allow an unrealistic investor nervousness to be passed on to customers in the form of slightly higher rates. This seems to be an anti-capitalistic view to the extent that it substitutes government's judgment for that of investors, but, in fairness, it cannot be called frivolous if one goes by Price-Anderson experience to date.

Within the resolution itself, only item (d) requires separate mention. NARUC feels that some plants for reasons of size or location, clearly pose lower risks than others and that this should be recognized. We would endorse incentives to safer operating practices as well, but we are not sure that a sufficiently reliable rating system can be devised.

Against this background discussion, four further points need emphasizing: First, there is substantial concern within NARUC that the retrospective premium approach written into

Price-Anderson at the time of the last renewal, while a distinct improvement on the Act as it had existed until then, does not go far enough. Granted that operating experience to date shows a multi-billion dollar accident to be highly unlikely, the fact is that raising the necessary amounts from the nuclear industry after a catastrophic accident is likely to be unworkable. For one thing, an accident of those proportions might well result in the shutdown of most operating reactors, especially those made by the manufacturer of the stricken plant. Consequently, a per kilowatt hour assessment would not work. Furthermore, with capital markets substantially disrupted and consumers concerned over increased electricity prices resulting from the need to replace the closed nuclear plants on an emergency basis, raising capital by other means will also not be easy.

Under these circumstances, some States may prefer to treat some part of this contingent liability in a manner similar to the per kilowatt hour assessments now used to fund both nuclear waste disposal and nuclear power plant decommissioning. Together with its major advantage of assuring that some funds would be available in the event of an accident, this approach also satisfies NARUC's overall policy in favor of having the true costs of each energy source reflected in its current prices.

NARUC believes this to be the best Federal posture on that point and suggests that you consider encouraging FERC to adopt this position for sales within its jurisdiction if the States involved in the sale have done so.

Second, the NARUC resolution notes that the limitations on liability on the Price-Anderson Act have not been changed in 30 years and bear little relation to the possible costs of a major accident. It seems therefore, that a reasonable estimate of the costs of the types of accidents that Price-Anderson is designed to deal with should be made. The General Accounting Office and/or the Nuclear Regulatory Commission should be asked to provide such an estimate before the limit on liability is finally agreed upon.

Third, the occurrence of the Three Mile Island accident since the last Price-Anderson Act renewal has served to illustrate the importance of approaching issues of nuclear safety in a frame of mind that acknowledges the possibility that serious accidents really can happen. This is not to say that probabilities should be ignored in a rush to react to awesome consequences. However, TMI illustrated the inadequacies of operator training, control room instrumentation and emergency procedures that had been designed through the years in a general belief that serious accidents were a type of bogeyman that would never have to be confronted in the real world. Price-Anderson is in some respects a relic of that more innocent era, and its revisions should occur under the assumption that it will be used in the next decade regardless of how firmly we all hold to the hope and--we venture to say the belief--that it will not.

Finally, reauthorization of the Price-Anderson Act must be viewed in conjuction with nuclear licensing reform. The

fundamental legislation on nuclear licensing and Price-Anderson passed as part of a package in 1957. Senator Clinton Anderson was so concerned about what he regarded as high handed licensing procedures employed by the Atomic Energy Commission at that time that he insisted on full and mandatory public hearings on the issuance of power plant licenses before he would agree to the indemnification features of Price-Anderson. (This history is discussed in Controlling the Atom: The Beginnings of Nuclear Regulation 1946-1962 by George Mazuzan and J. Samuel Walker at pages 198-213). Furthermore, the legislation preempting States from regulating nuclear safety was passed two years later in the context of the assurance that States could instead be fully involved in the Federal hearing process.

It is, of course, not necessary to regard these three elements of nuclear regulation as frozen forever in relationship to each other because of their original linkage. Nevertheless, the relationship among these provisions should not be ignored either. Nuclear power's privileged status with regard to both State regulation and indemnification was originally purchased with the assurance that the Federal hearings process would be open, fair and thorough.

Those who now feel that nuclear licensing hearings can be substantially expedited with participants and issues limited or excluded entirely should be prepared also to support both Price-Anderson indemnification limits that realistically reflect possible accident consequences and the re-examination of the

extent of State preemption in light of the vastly greater sophistication that exists today in State governments with regard to safety and environmental regulation in general.

Thank you for this opportunity to present our views.

Respectfully submitted,
Peter A. Bradford
President

Resolution Regarding the Extension of the Price-Anderson Act Limiting the Liability of the Nuclear Industry for Damages Resulting from Nuclear Accidents

WHEREAS, The Price-Anderson Act is currently before Congress for its third reauthorization, having been substantially modified in 1965 and 1975; and

WHEREAS, The limitations on liability in the Price Anderson Act have not been changed in 30 years and bear little relation to the possible costs of a major accident; and

WHEREAS, The Nuclear Regulatory Commission has estimated the likelihood of a severe core-melt nuclear accident at 50% over the next 20 years; and

WHEREAS, The victim of a nuclear accident must be compensated; and

WHEREAS, All energy sources should have their true costs reflected in their prices; and

WHEREAS, State commissions should be allowed to currently fund the liability created by Price-Anderson; now, therefore, be it

RESOLVED, That the Executive Committee of the National Association of Regulatory Utility Commissioners (NARUC), assembled in its Summer Meeting in San Francisco, California, endorses the extension of the Price-Anderson Act subject to the following modifications:

(a) Liability for accidents should be assessed against the industry but upper limits should be maintained;

(b) A mechanism to adjust the limit automatically for inflation should be included and a mechanism to review the upper limit should be established;

(c) A clear congressional commitment that victims should be compensated for any damages should be stated;

(d) To the extent possible, differences in risk among nuclear power plants should be recognized; and

(e) State regulatory bodies should be allowed to provide current funding of utility liabilities and the cost thereof be treated as current costs for tax purposes.

Sponsored by the Committee on Electricity
Adopted July 31, 1985

Preparing for the Improbable:

Safety Incentives and the Price-Anderson Act*

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The Price-Anderson Act indemnifies the commercial nuclear power industry for damages above (approximately) $660 million. We develop a present value model of firm investment in reactor safety systems to investigate the safety incentives of amendments to the Act. We find that decreases in the market-based, private insurance premium, and increases in the industry self-insurance premium, increase the incentive to install safety systems more quickly. Thus, self-insurance premiums in proportion to market-based premiums, rather than equal payments by reactor owners, should yield a higher level of safety than under the current law.

Three Mile Island showed that losses to the public could be less than those sustained by the electric utility owning the reactor. But the accident at Chernobyl impressed the world with the enormity of its off-site damages. During the week of the accident, subcommittees in both the U.S. Senate and House of Representatives were debating the renewal of the Price-Anderson Act (PAA). The Act codifies insurance for nuclear reactors by providing for two levels of coverage: private market-based insurance and industry self-insurance. However, the coverage will expire for new facilities on August 1, 1987.

*While many people have assisted our research, some stand out for their special contributions: David Cain, Paul David, Peter Navarro, Roger Noll, and W. Edward Steinmueller. Remaining errors are our own. Research was funded by grants from the Exxon Educational Foundation to the Environmental Quality Laboratory at the California Institute of Technology and from the Center for Economic Policy Research at Stanford University.

In considering the renewal of the PAA, policy makers should realize that the electric utility's behavior regarding safety is not independent of insurance premiums and coverage. The size of insurance premiums affects the firm's income and, hence, the incentive to engage in accident-avoidance behavior to protect this income.

We approach the problem by constructing an expected present value model for investment in reactor safety systems. The marginal benefit to the firm of responding quickly to regulation is the increase in the probability of enjoying income without an accident. But, the cost of a safety system generally decreases with time as other firms engage in research and development. Insurance complicates these opposing tendencies. In our model, we find that increases in private insurance premiums increase waiting times, while increases in industry self-insurance premiums decrease waiting times. We discuss the policy implications of these results in our concluding section.

Insuring Nuclear Power Plants

The Price-Anderson Act has the dual purpose of "protect(ing) the public and . . . encourag(ing) the development of the atomic energy industry." (42 U.S.C. 2012i) It protects the public by providing compensation for personal injury and property damage to roughly $660 million. It encourages the development of the industry by indemnifying plant operators and their suppliers for off-site damages above $660 million. In exchange for indemnity, operators assume strict liability for their actions after an "extraordinary nuclear occurrence." An extraordinary nuclear occurrence implies both a substantial discharge of radiation and substantial damages to persons or property.[1] For lesser damages the rules of state tort law apply.[2]

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[1] An extraordinary nuclear occurrence is the death or hospitalization, within 30 days of the event, of five or more people, or $2,500,000 or more of damage off-site (to) one person, $5 million or more such damage in the aggregate, or $5,000 or more of damage off-site (to) fifty or more persons (Subpart E, 10 C.F.R. 140).

[2] See, for example, *Silkwood v. Kerr-McGee Corp.* 485 F. Supp 566 (D.C. Oklahoma, 1979), affirmed in part, reversed in part on other grounds 667 F.2d 908 (1981), reversed on other grounds, 104 S.Ct 615 (1984), rehearing denied, 104 S.Ct. 1430 (1984).

To compensate these losses, the PAA defines two levels of insurance. The first is $160 million in private insurance provided by American Nuclear Insurers and the Mutual Atomic Energy Liability Underwriters. Premiums for commercial plants are adjusted to reflect size, location (population density and property values), and, after the completion of two years of operation, the reactor's probability of having an accident, measured by an "Engineering Rating Factor." The factor is based on plant characteristics including radiation exposure, regulatory performance, significant events, and containment integrity. Currently, the annual average premium for operating reactors is about $800,000. The premium can be reduced by up to 20%, or increased by up to 30%, based on the safety performance of the reactor.

Second, there is a layer of industry self-insurance. After an accident, reactor operators would be assessed *equally* not more than $5 million apiece, i.e., the firm owning the disabled reactor would pay the same amount for off-site damages as *all* other firms. Assuming 100 reactors, the second layer provides $500 million in coverage. The Federal District Court in the district where the accident occurred would distribute these funds. If damages exceed the limit, the Court would apply bankruptcy principles by distributing funds to individuals in proportion to total damages. Above the total coverage of $660 million, the nuclear power plant owner, the builders, and the parts suppliers are relieved of financial responsibility for damages to the public.

The 99th Congress was unsuccessful in renewing the Price-Anderson Act. On the first day of the session (January 3, 1985) two bills were introduced: HR 51 by Price (D-Illinois) would have increased the maximum payment for industry self-insurance from $5 million to $10 million, whereas HR 445 by Seiberling (D-Ohio) called for compensation of all damages. These two bills, plus HR 2665 by Weiss (D-New York), were consolidated for mark-up in the Energy Subcommittee of the House Insular and Interior Affairs Committee. On the second day of discussion, Udall (D-Arizona), chairman of both the committee and subcommittee, introduced HR 3653. As shown in Table 1, the bill increased the first layer of insurance to $200 million (from $160 million) and would have raised the maximum payment by each reac-

tor operator to $100 million (from $5 million), increasing total coverage to $10.2 billion. Although the subcommittee reduced the upper limit to $2.5 billion and the committee raised it to $8.2, a compromise of $6.5 billion was reached before the bill was sent on. Both the House Energy and Commerce Committee and the Science and Technology Committee approved the $6.5 billion limit. But the bill did not come to the House floor.

In the Senate, S 1225, by Simpson (R-Wyoming) and McClure (R-Idaho), won approval with amendments from the Senate Committee on Energy and Natural Resources and the Subcommittee on Energy Research and Development. See Table 2. Although S1225 would have increased total coverage to only $2.6 billion, it would have done so by allowing different self-insurance payments for individual reactor operators. The bill was referred to the Senate Environment and Public Works committee where it was considered with S 445 by Hart (D-Colorado), S 1761 by Stafford (R-Vermont), and S 2072 by Metzenbaum (D-Ohio). The Environment Committee approved a $6.5 billion limit, as in the House, but there was no reconciliation among Senators before the end of the last session.

Although many issues have been debated in Congress (e.g., whether members of the self-insurance pool could recover payments from the operator of the damaged reactor, see "Subrogation" in Tables 1 and 2, or whether coverage should be adjusted for inflation), primary attention has been focused on the maximum coverage of the first and second layers of insurance.[3] In the next section we propose a model to examine the influence of these changes in coverage on the incentives to install safety systems.

[3] On other aspects of the attempt to renew the PAA, see "Price-Anderson Legislation Dies in Final Days of 99th Congress," *Public Utilities Fortnightly* (November 13, 1986), p. 38-39. The article concludes with "one industry observer, noting expected changes in congressional committees with Price-Anderson jurisdiction, predicted that the 100th Congress will have to pass a short-term Price-Anderson extension before resolving the issues that killed the measure this year."

A Model of Investment In Safety Systems

Our goal is to provide the outline of a model that describes electric utility response to the announcement of a mandated safety system.[4] We assume that firms attempt to maximize the present value of their investment in reactor safety systems by choosing an optimal date of installation.[5] Modeling involves the identification of cash flows to the firm and the probability of receiving each cash flow. We consider three possibilities: (1) no accident at the firm's plant and no accident in the industry, (2) no accident at the firm's plant, but an accident in the industry, and (3) an accident at the firm's plant.

In periods of normal operation, the firm receives an income equal to the allowed return to equity in the firm's rate base, from which it subtracts a premium for private insurance.[6] We call this normal income. When an accident occurs at another firm's plant, normal income is reduced by the industry self-insurance premium. If an accident occurs at the firm's plant, the nuclear unit is disabled; but under current regulatory practices, the plant remains in the rate base. However, out of normal income, the firm must pay the industry self-insurance premium and replacement-power costs, a portion of which can be charged to customers.

What are the probabilities of these outcomes? Any model of the probability of a reactor accident is hampered by the lack of experience with nuclear power technologies. One alternative is a detailed analysis of the probability of failure for reactor sub-systems, known as a probabilistic risk analysis (PRA). The most extensive PRA was conducted for the Atomic Energy

[4] While our model could apply to many safety systems, it was created to examine the installation behavior of the Safety Parameter Display System. The SPDS provides computer-generated video displays of crucial safety parameters to plant operators for quick recognition of abnormal events. The system is one of the emergency-response facilities defined in a series of analyses of the Three Mile Island accident. In July 1982 the Nuclear Regulatory Commission required utilities to submit schedules for installing the SPDS. Note that while the SPDS was required, no deadline was set. See Joseph P. Joyce and George W. Lapinsky, A History and Overview of the Safety Parameter Display System Concept. *IEEE Transactions on Nuclear Sciences* NS-30, 1 (February 1983).

[5] An article by Peter Huber and Donnamarie McCarthy, "The Role of the Price-Anderson Act in the Contemporary Tort System," *Public Utilities Fortnightly* (May 1, 1986), pp. 22-28, claims "It is impossible for engineers and financial analysts to make fine (marginal safety) calculations" (p. 27). We believe, however, that utility executives behave rationally and that we can model their behavior, whether or not these decision makers can articulate the reasons for their actions.

[6] Although the firm is able to pass some of the insurance premium costs to its customers, to better examine the influence of changes in insurance premiums on firm behavior, we assume no expensing of premiums.

Commission and the Nuclear Regulatory Commission, *Reactor Safety Study: An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants* (October 1975). The report concluded that the best estimate of a core melt-down per reactor year was 0.005%, i.e., with 100 operating reactors, there would be a 0.5% chance of melt-down in the industry each year. More recent studies of particular plants place the probability of a core melt-down between 0.1% and 0.0002% per reactor year.[7] In the sensitivity analysis of our model, we set the probability of an accident without the safety system equal to 0.01% and the probability of an accident with the system to be one-third less likely (0.0067%).

Regarding the cost of installing the safety system, let the cost of the system decrease with the number of adopters, which increases with time.[8] The cost at the time of installation depends on the number of previous adopters. The firm recovers a portion of its investment through the allowed rate of return on the rate base. The portion of recovery depends on state commission policy.

The present value of the safety system is the net discounted cash flow from each moment in time. The firm chooses an optimal date of installation that maximizes the present value of its investment in the nuclear reactor safety system. It is equal to the discounted probability of receiving normal income plus the net return on its investment in the safety system. As we show elsewhere, we can solve for the optimal installation date.[9] The date depends on the size of the insurance premiums, the discount rate, the probability of an accident before and after the installation of the safety system, the cost of the system, the percentage of cost recovery, the change in cost as other firms engage in research and development, and the expense to the firm of purchasing power after an accident.

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[7] See V. Joksimovich, "A Review of Plant Specific PRAs," *Risk Analysis* 4.4 (1984), pp. 255-66.

[8] For simplicity, each firm has an expected time path of cumulative adoption for all reactor operators, i.e., the individual firm believes that its behavior will not influence other firms. The cost of these systems ranges from less than $1 million, using small dedicated computers, to a $20 million system meeting military specifications. See papers presented at the Electric Power Research Institute conference on SPDS implementation, May 6-8, 1986.

[9] See Jeffrey Dubin and Geoffrey Rothwell, "Insurance for Nuclear Plant Accidents and the Adoption of Reactor Safety Systems," (California Institute of Technology, December 1986).

Analysis

To illustrate our model, we test the sensitivity of the optimal installation date to the underlying parameters.[10] For example, in Table 3 we consider the influence of insurance premiums. We allow (1) the private insurance premium to vary between $1 and $10 million, and (2) the self-insurance premium to vary between $5 and $100 million. The lower figures for each premium represent the status quo. The range of the private insurance premium depends on the response of premiums to the level of coverage.[11] The high end of the self-insurance premium comes from House Bill 3653. In our base case, the optimal installation date is 1.39 years after the safety system was mandated (see the upper, left-hand corner of Table 3). Notice that as the private insurance premium increases or as the self-insurance premium decreases, firms install more slowly. As annual private premiums rise, firms receive lower returns, decreasing the incentive to protect their income. On the other hand, to avoid paying expected self-insurance premiums, firms install reactor safety systems more quickly. The self-insurance premium has a smaller influence than the private insurance premium because firms pay the latter each year, whereas the former is paid only after an accident.

While insurance premiums are our primary concern, federal regulation is not alone in influencing electric utility behavior. State regulatory commissions determine the portion of purchased-power costs that can be charged to customers and the level of recovery on safety-system investment. As firms are more able to charge customers for purchased electricity, the incentive to avoid reactor accidents decreases. This result would also apply to other costs associated with an accident sustained by the firm. As the regulatory commission allows the firm to recover a greater percentage of the investment in safety systems, the influence of

[10] We selected the following values for our base case: a private insurance premium of $1 million, a industry self-insurance premium of $5 million, a real discount rate of 3%, research and development costs for the safety system of $3 million that decline at a rate of 10% per year, fixed costs of the system of $3 million, a recovery rate on the investment in the system of 90%, purchase-power costs of $400 million (approximately $1 million per day) with a recovery rate of 90%.

[11] Debate in the House Interior and Insular Affairs subcommittee included raising private insurance to $1 billion. This coverage could require a premium greater than $10 million. Although defeated, a similar proposal may be reintroduced in the 100th Congress.

declines in technology costs diminishes; so the firm installs more quickly. Hence, Congress should not ignore state utility commission policies regarding investment and expense accounting.

We also consider the sensitivity of our model to changes in the rate of decline in safety-system cost, the discount rate, the size of the plant, the amount of research and development costs, and the probability of an accident with and without the safety system. As cost declines more rapidly over time, firms have a greater incentive to wait for cheaper systems. And as the discount rate increases, the present value of waiting for a cheaper system decreases, leading to longer waiting times. Similarly, as research and development costs increase, the firm has a greater incentive to wait until costs fall. Increases in the size of the reactor encourage quicker installation, because of the increase in the opportunity cost of losing the reactor's power. Finally, as the probability of an accident increases, or as the effectiveness of the safety system increases, firms install sooner.[12] These results support the existence of early cooperative research and development among utilities, for example, through organizations such as the Electric Power Research Institute.

Conclusions

How would proposed amendments to the Price-Anderson Act influence incentives to install reactor safety systems? We explored this question by modeling the decision to install a reactor safety system as a function of the probability of a serious accident and variables representing the opportunity cost of the reactor and insurance premiums. Our model shows that (1) as private insurance premiums rise, firms wait longer, and (2) as industry self-insurance premiums rise, firms install more quickly.

[12] Dubin and Rothwell (1986) empirically examine the installation of the Safety Parameter Display System. We find that firms owning plants with greater numbers of equipment failures and operational errors, resulting in plant shutdowns of more than 72 hours, installed the SPDS sooner than other firms. We interpret this finding as support for our contention that as the probability of an accident increases, firms install safety systems sooner.

Therefore, if federal policy makers wish to encourage safety system installation at nuclear reactors, they should not raise private insurance coverage, and hence premiums, in an era of tight insurance markets. If higher levels of coverage are required, Congress could assign a larger self-insurance premium to the owners of riskier reactors. This proposal is consistent with the original version of Senate Bill 1225. For example, after an accident, firms might be required to pay the same proportion of industry self-insurance coverage as they now pay for market-based private insurance. Also, instead of raising private insurance coverage to $200 million from $160 million, the extra $40 million could be assigned to firms with riskier reactors or to the firm that sustains the accident. This procedure places the incentive of accident avoidance on the owner of a risky plant, as the insurance market does. While providing the same level of coverage, these alternatives induce firms to install safety systems sooner than the amendments to the Price-Anderson Act considered at the end of the previous Congress.

TABLE 1: U.S. HOUSE BILLS OF THE 99TH CONGRESS COMPARED

BILL NUMBER:	STATUS QUO	H51	H445	H2665	H3653
PRIMARY SPONSOR:		PRICE	SEIBER-LING	WEISS	UDALL
WOULD EXTEND PAA TO	1987	1997	NA	2007	1997
MAXIMUM COVERAGE ($MILLIONS)	660	1160	TOTAL	TOTAL	10200
INDEMNITY?	YES	YES	YES	NO	YES
INFLATION ADJUSTMENT?	NO	NO	NO	YES	YES
FIRST LAYER:					
MINIMUM COVERAGE AMOUNT	160	160	160	160	200
SECOND LAYER:					
TOTAL MAXIMUM AMOUNT	5	10	5	TOTAL	100
ANNUAL MAXIMUM AMOUNT	5	10	5	TOTAL	10
DIFFERENTIAL PAYMENTS?	NO	NO	NO	YES	NO
SUBROGATION: WHO CAN SUE WHOM?					
VICTIM VS VENDOR	NO	NO	NO	NO	NO
UTILITY VS VENDOR	NO	NO	NO	YES	NO
UTILITY VS UTILITY	NO	NO	NO	YES	YES
FEDERAL VS UTILITY	NO	NO	NO	YES	YES
TYPES OF INCIDENTS?					
EXTRAORDINARY EVENTS	YES	YES	NO	NO	NO
NON-EXTRAORDINARY EVENTS	TORT	TORT	STRICT	STRICT	STRICT
PERSONAL INJURY LIMITATIONS:					
YEARS AFTER DISCOVERY	3	3	3	3	3
YEARS UNTIL DISCOVERY	20	20	NONE	20	30

TABLE 2: U.S. SENATE BILLS OF THE 99TH CONGRESS COMPARED

BILL NUMBER:	STATUS QUO	S445	S1225	S1761	S2072
PRIMARY SPONSOR:		HART	SIMP-SON	STAF-FORD	METZEN-BAUM
WOULD EXTEND PAA TO	1987	NA	2012	2002	NA
MAXIMUM COVERAGE ($MILLIONS)	660	TOTAL	2160	TOTAL	TOTAL
INDEMNITY?	YES	YES	YES	YES	YES
INFLATION ADJUSTMENT?	NO	NO	NO	NO	NO
FIRST LAYER:					
MINIMUM COVERAGE AMOUNT	160	160	160	160	160
SECOND LAYER:					
TOTAL MAXIMUM AMOUNT	5	TOTAL	15	15	5
ANNUAL MAXIMUM AMOUNT	5	TOTAL	15	15	5
DIFFERENTIAL PAYMENTS?	NO	NO	YES	YES	NO
SUBROGATION: WHO CAN SUE WHOM?					
VICTIM VS VENDOR	NO	NO	NO	NO	NO
UTILITY VS VENDOR	NO	NO	NO	NO	NO
UTILITY VS UTILITY	NO	NO	NO	NO	NO
FEDERAL VS UTILITY	NO	NO	NO	NO	NO
TYPES OF INCIDENTS?					
EXTRAORDINARY EVENTS	YES	NO	YES	YES	NO
NON-EXTRAORDINARY EVENTS	TORT	STRICT	TORT	TORT	STRICT
PERSONAL INJURY LIMITATIONS:					
YEARS AFTER DISCOVERY	3	3	3	3	5
YEARS UNTIL DISCOVERY	20	NONE	NONE	30	NONE

TABLE 3: PERCENTAGE CHANGE IN INSTALLATION TIMES AND INSURANCE PREMIUMS*

	PRIVATE INSURANCE PREMIUMS				
SELF-INSURANCE PREMIUMS	1.0	2.5	5.0	7.5	10.0
5	100%	136%	199%	269%	347%
25	90%	125%	188%	257%	333%
50	78%	112%	174%	241%	316%
75	66%	100%	160%	226%	299%
100	54%	87%	147%	211%	282%

*All premiums are in millions of dollars. Optimal waiting times are expressed as a percentage of the base case value of 1.39 years. For example, with an industry self-insurance premium of $5 million and a private insurance premium of $ 1 million, the optimal waiting time is 1.39 years. But if the private insurance premium were to rise to $10 million, the optimal waiting time would increase to 4.82 (= 1.39 x 347%) years. Or, if self-insurance premiums were to rise to $100 million, the optimal waiting time would decrease to 0.75 (= 1.39 x 54%) years.

THE UNIVERSITY OF CHICAGO
OFFICE OF THE PRESIDENT
5801 ELLIS AVENUE
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March 31, 1987

The Honorable J. Bennett Johnston, Jr., Chairman
Senate Energy and Natural Resources Committee
364 Dirksen Senate Office Building
Washington, D. C. 20510

Dear Senator Johnston:

I am writing in support of S.748, the legislation introduced by you and Senators McClure and Domenici to extend the Price-Anderson Act.

Since 1946, The University of Chicago, as contractor for the management of Argonne National Laboratory, has been associated with the Government's nuclear energy program. Before that, the University was the site of Enrico Fermi's experiment that achieved man's first sustained nuclear chain reaction. Argonne National Laboratory long has had a key role in the nation's reactor research and development program, and its accomplishments trace the progress of reactor development in the United States: the first generation of electricity from nuclear energy, the sodium-cooled experimental breeder reactor, the advance design of the submarine reactor, the experimental boiling water reactor, and, continuing on into the present, the Integral Fast Reactor, which shows great promise for the future.

The University of Chicago would not have been able to participate in this program had it not been for the Government's indemnity protection which assured that, in the event of a catastrophic accident, the University's endowment, contributed to meet specified educational purposes, would not be at risk.

Since the passage in 1957 of the Price-Anderson Act, all contractors, subcontractors and suppliers, as well as any person who might be liable, are indemnified. This has enabled The University of Chicago to perform its mission in research and development without fear of financial ruin in the unlikely event of a catastrophic incident. It also assured that the public would always be protected in the event of such an incident.

With the Price-Anderson indemnity in its prime contract, the University has encountered no difficulty, in itself continuing to act as contractor for Argonne and assuring subcontractors that they will be protected in the event of an incident. This makes available a broad segment of industry to compete for the supplies and contracting work needed to support the Laboratory's and nation's reactor development program.

The University of Chicago's prime contract for Argonne National Laboratory will expire on September 30, 1988, over a year later than the current expiration date of the Price-Anderson Act. If the Act is not renewed, the University will not feel secure in undertaking the continued management of Argonne. Even if the University was assured that it had adequate protection for itself, it would be difficult to carry on business without the Price-Anderson mechanism automatically indemnifying all suppliers, contractors and others who have dealings with the program.

We are pleased that the proposed legislation does not contain provisions for subrogation or penalties against contractors. Contractors will find little protection under the Act if the Government, after paying public liability claims, could then proceed against them for reimbursement. The point of Price-Anderson is to assure that all valid claims will be paid without the necessity of determining who can be held liable for the incident.

From the earliest days of the program, it was clear that the contractor must provide strong leadership of the laboratory, and that it will be paid its full costs of the operation and protected against risk of loss or damage. The University of Chicago does not operate Argonne as a commercial venture. We receive, beyond reimbursement of our direct costs, only a fee in lieu of and based upon demonstrated indirect costs. The University is not compensated for taking any risks--let alone the remote catastrophic risks that are ever-present with nuclear reactors.

However, it must be emphasized in the strongest terms that full indemnification does not mean that we lack incentive to pursue safe practices. The safe operation of the Laboratory is given high attention by the Laboratory management and by the University's Board of Governors for Argonne. We are proud of our safety record. As long as we are responsible for Argonne's operations, you can be assured that commitment will remain. It is one that goes beyond compensation.

As to the proposed legislation, we offer one comment. If the new legislation increases the aggregate amount of liability for incidents that may occur under existing contracts, the indemnity should likewise be increased to cover the increased liability. This would assure continued protection for the University and other contractors until such time as their contracts are amended to raise the liability and indemnity amounts.

We appreciate this opportunity to advise you of our views regarding S.748 and to urge you to proceed with the renewal of the Price-Anderson Act.

I am asking Samuel Golden, Associate General Counsel, to be in contact with your staff to provide additional comments on the bill and any technical assistance that your staff may desire.

Thank you for your attention to this important matter.

Cordially,

Hanna H. Gray

Hanna H. Gray

cc: The Honorable James A. McClure

By Federal Express

April 3, 1987

United States Senate
Committee on Energy and Natural Resources
Washington, DC 20510
J. Bennett Johnston, Chairman

Re: Private Insurance for Gross Negligence or Willful Misconduct of Government Contractors under Price-Anderson

Dear Senator Johnston:

Mr. Marrone of American Nuclear Insurers asked me, as Counsel to both nuclear pools (ANI and MAERP), to respond to your letter of March 27, 1987 on their behalf.

As you know, the nuclear pools have not provided nuclear energy liability insurance for government contractors in connection with the Price-Anderson program. Your question deals with the availability and cost of such insurance today. A bit of history will be helpful.

When the program started in 1957, the possibility of making such insurance available was thoroughly explored by the nuclear pools and the government. The consensus was that a truly private insurance program for contractor activities was not feasible. It was apparent that there was a wide range in the scope of contractor activities and great variation in the hazard. Many activities were classified.

From the government's point of view, the cost of insurance would become reimbursable. The government's position has historically been that it is less expensive in the long run to bear the risk than to insure it. Further, the government clearly preferred to control the defense of claims in which it had a paramount interest. For the nuclear pools, the variation in hazard and the classified nature of many contractual operations meant that normal underwriting, rating and claims practices could not be used. Since no credible risk premium could be established, any insurance program would have to be almost wholly "cost plus".

These circumstances are still relevant today. Thus, a private nuclear insurance market for government contractor activities is not likely to arise. And the possibility of developing a market restricted to covering gross negligence or willful misconduct is very remote indeed.

Sincerely,

Richard A. Schmalz
Counsel to the Nuclear Pools

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